

# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



## THESIS

### **FACTORS AFFECTING THE RETENTION OF JUNIOR OFFICER FIXED WING NAVAL AVIATORS**

by

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June 2003

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**FACTORS AFFECTING THE RETENTION OF JUNIOR OFFICER FIXED  
WING NAVAL AVIATORS**

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## **ABSTRACT**

The purpose of this research is to examine and supplement the information the Navy uses to design policies geared to retain fixed wing aviators past their initial commitment. Currently, the Argus Career Milestone and Tracking System web-based survey is an important tool used by the Navy to study retention. However, this database does not disaggregate fixed wing aviators based on the platforms flown. Some factors that affect retention may be unique to the individual sub-communities. The goal of this paper is to first examine whether factors for retention differ within the aviation community as a whole. The second objective is to determine whether there are retention factors that are not taken into account by the ARGUS database. The more detailed information generated in this study can help the Navy design more effective policies for retaining junior officer fixed wing naval aviators.

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## **I. INTRODUCTION**

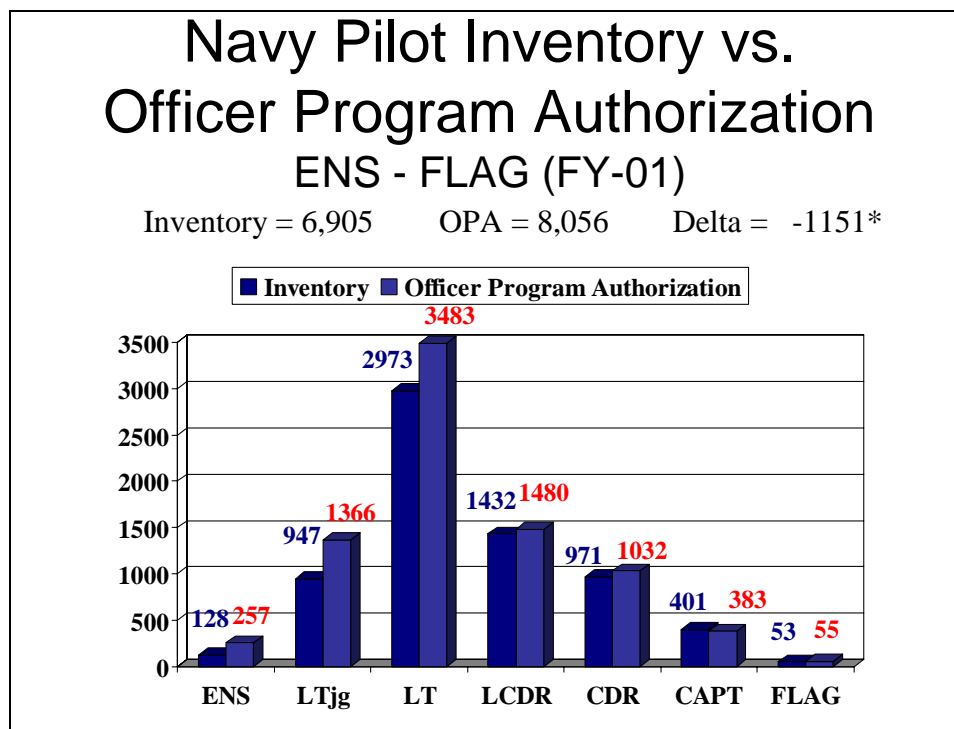
### **A. BACKGROUND**

On 4 March 1998, Vice Admiral D. T. Oliver, Chief of Naval Personnel and Deputy Chief of Naval Operations (Manpower and Personnel), stated before the Personnel Subcommittee of the Senate Armed Services Committee on Recruiting and Retention:

Without question, aviation retention must improve significantly prior to the end of the century to meet future squadron department head requirements... Aviation Career Incentive Pay (ACIP) and Aviation Continuation Pay (ACP) continue to serve as baseline retention tools for ensuring the availability of adequate numbers of career force aviators to meet mission requirements. Enhancements to ACIP and ACP, included in the FY98 NDAA [National Defense Authorization Act], restored some value to these pays which had been lost through inflation, and narrowed the disparity between military and civilian aviation salaries. Accessions below requirements in the downsizing environment of Fiscal Years 1992-95 will result in a need to increase aviation retention well above historic norms.

Information from the Naval Aviation Career Manager's office (2002) shows that in fiscal year 2002, there were 12,977 total naval aviators, both pilots and Naval Flight Officers. In the junior officer ranks (Lieutenant, Lieutenant Junior Grade, and Ensign), there were 8,275 total aviators. This is 1,052 aviators below Navy requirements. Information from the Naval Aviation Career Manager's office dealing with the pilot inventory at the end of fiscal year 2001 is shown below in Graph 1.

**Graph 1. Qualified Pilot Inventory as of October 2001 showing the current Pilot inventory versus the number of authorized pilot billets.**

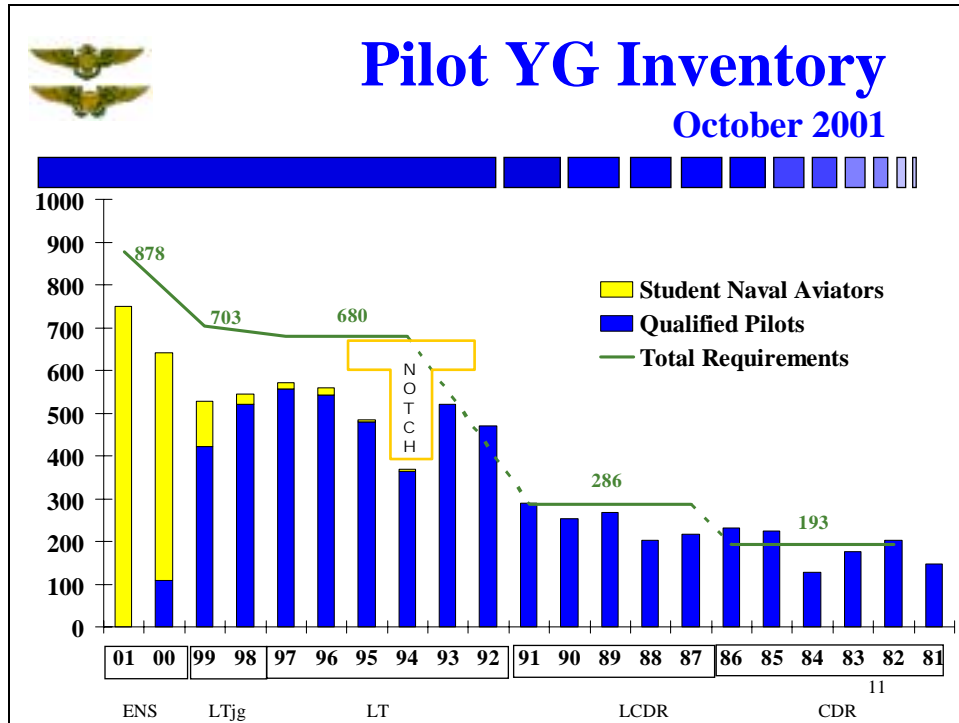


Source: Aviation Officers Issues Brief from the Naval Aviation Community Manager's Office.

Graph 1 shows that at the end of fiscal year 2001, there were 6,905 total naval pilots. This includes 4,450 Lieutenant and Lieutenant Commander Navy pilots, 558 pilots less than the requirement for those ranks. As Vice Admiral Oliver stated, "retention must improve significantly to meet future squadron department head requirements." The deficit seen is due to the low aviator retention after the initial commitment aviators incur from flight training. Currently, all naval aviators accrue a commitment, Minimum Service Requirement (MSR), of seven years of service after receiving their gold wings for the helicopter and propeller pipelines and eight years after they receive their wings in the jet pipeline. With average aviators requiring two to three years to receive their wings, the aviators' first opportunity to leave the service occurs at the nine to eleven years of service (YOS) mark.

Graph 2 below shows the Navy Pilot Inventory as of October 2001.

**Graph 2. Pilot Year Group (YG) Inventory as of October 2001**



Source: Aviation Officers Issues Brief from the Naval Aviation Community Manager's Office.

Note: "Notch" represents the so called T-notch year groups of 1993-1995. These year groups entered flight training at lower than normal accession numbers to alleviate the backlog in the training command.

As seen in Graph 2 above, pilots leaving at the end of their initial commitment make up the largest attrition of Navy pilots. Starting at the nine to eleven year mark, pilots will end their initial commitment incurred from their pilot training and become eligible to voluntarily leave the service. A great many leave during this time period. This leaves a large shortfall in senior aviator positions at the Lieutenant Commander (LCDR) department head level that occurs at 12 to 14 YOS. To fill current department head requirements, 286 pilots per year group are needed. This is 42 percent of the 680 pilots per year group for Lieutenants (Naval Aviation Career Manager, 2002). The Naval Aviation Career Manager's office (2002) shows a 38 percent historical retention average

for Navy pilots, while predicting the need for 85 percent retention in fiscal year 2005 to accommodate the 1994 year group. Because each of the Lieutenant (LT) year groups are already below the required manning of 680 pilots, a retention rate greater than predicted is needed to fill required department headed manning.

While retention problems exist in all officer communities throughout the Navy, the aviation community has been hit hardest because of a demand for military pilots in the civilian aviation sector. The demand for pilots in the civilian sector as well as the lure of the large airline salary for highly trained military pilots makes retention of military aviators particularly difficult. For example, according to the 2002-2003 Salary Survey conducted by AIR, Inc., the income of an American Airlines pilot who makes captain by his or her tenth year is currently \$12,606 a month or \$151,272 a year. Even in just five years at American Airlines, a first officer will make \$8,090 a month or \$97,080 a year (Airline Facts Source: 2002-2003 Salary Survey by AIR Inc., 2002). This is comparable to military pay with the retention bonus for a Lieutenant Commander pilot with 14 years of service. Following the events of September 11, 2001, the airline industry has slowed down but will surely regain strength. Airline hiring is currently low but historically hiring is cyclic and will go up again. Even now AIR Inc. showed that by December 18, 2002, 5,657 pilots were hired in 2002 including 534 by the major airlines and 1,601 by national airlines (regional) (Airline Pilot Hiring – November '02 Summary, AIR Inc., 2002).

A junior officer must always choose between remaining in the Navy or leaving for a civilian career. A lot of that decision is based on non-financial factors such as time away from home, movements of spouse/family, etc. To entice aviators to remain, the Navy has traditionally used a retention bonus. From 1989 to 2000, the Navy used a bonus program called Aviation Continuation Pay (ACP). ACP was targeted only at platform communities that evidenced pilot shortfalls. ACP ranged from \$0 to \$25,000 depending on year and platform. ACP did not bring pilot retention up to the needed level (Moore and Griffis, 1999). By February of 1999, the shortage was 1,153 aviators or approximately 15 percent of requirements (Mills, 1999).

On July 7, 2000, the new bonus program, Aviation Career Continuation Pay (ACCP), increased the bonus under ACP to \$25,000 a year for a five-year contract of \$125,000. This program was started to improve retention in sea duty billets and to provide equality to all aviators regardless of platform (Moore and Griffis, 1999). These bonuses were given typically as a \$62,500 lump-sum payment up front and \$12,500 for the next five years. The aviator also has the option of a year-by-year contract instead, which yields a \$15,000 bonus annually for those same five years. ACCP, unlike ACP, was offered to all aviators independent of specific retention levels in a particular platform-based community.

The problem here, as Vice Admiral Oliver says, is “Aviation Career Incentive Pay (ACIP) and Aviation Continuation Pay (ACP) continue to serve as baseline retention tools” and these are used to try to even “the disparity between military and civilian aviation salaries.” Perhaps larger bonuses will help with the problem, but as Adam Hebert of Air Force Magazine states: “Higher pay and bonuses alone will not fix the problem, as analysis has shown pilots essentially lose lifetime income with every year they remain on active duty instead of leaving for the airlines—even when enhanced bonuses and retirement are taken into account.” Perhaps instead of continuously raising bonus levels and therefore the military budget to improve aviator retention, the Navy can find other options that might improve retention for less money.

## **B. OBJECTIVES/PURPOSE**

The first step in proposing alternatives to bonuses is to gather information regarding job satisfaction. The purpose of this research is to examine and supplement the information, much of it related to job satisfaction, that the Navy uses to design policies for retaining fixed wing aviators through their department head tours. Beginning in February 2001, the Navy instituted the Argus Career Milestone and Tracking System web-based survey. Argus is an important tool used by the Navy to study retention and job satisfaction issues. The goal of this paper is first to examine whether factors for retention differ within the aviation community as a whole by looking at retention within the aviation community and at factors addressed in the Argus data base. However, this

database does not currently disaggregate fixed wing aviators based on the platforms flown. Some factors that affect retention may be unique to the individual sub-communities. So the second part of this research involved gathering more detailed information about job satisfaction by interviewing a sample of fleet aviators. The second objective is to determine from the interviews whether there are retention factors that are not taken into account by the ARGUS database or are platform specific. The more detailed information generated in this study can help the Navy design more effective policies for retaining junior officer fixed wing naval aviators.

### **C. RESEARCH QUESTIONS**

1. Do retention disparities exist between aviators of different platforms within the fixed wing aviation community (i.e., F/A-18, E-A6B, P-3C, etc.)?
2. Do career decisions made to stay in or leave naval aviation differ systematically by platform sub-communities or does the ARGUS database accurately reflect the reasons for all aviators?
3. What other factors, not available in the ARGUS personnel database, exist that affect the junior aviator's decision to remain in the Navy? Are any of these factors platform specific?

### **D. SCOPE, LIMITATIONS, ASSUMPTIONS**

This study is limited by the need to interview current active duty naval aviators in fleet squadrons. These aviators are located throughout the United States as well as deployed around the world. Due to a lack of sponsored travel funds, only select Naval Air Stations were used for data gathering. A total of three naval air stations were chosen. To keep fleet coastal bias to a minimum, two bases in the Atlantic Fleet (NAS Oceana and NAS Norfolk) and one in the Pacific Fleet (NAS Whidbey Island) were chosen.

A great number of naval aviators and NFOs exist in the naval aviation community, all of whom fly various types of aircraft. To limit the scope of this study and operate within the constraints of the selected Naval Air Stations and limited duration of this study, certain constraints were imposed. Naval Flight Officers were omitted because

of the observed lack of retention problems when compared to pilots (Cymrot, 1990). Since this study will examine retention in communities with the lowest retention, fixed wing aviators were chosen. Both Lawry and Bookheimer that found propeller and jet pilots were more likely to leave the service than helicopter pilots or NFOs. Finally to generate a representative cross section of fixed wing aircraft and to remain with in the three selected Naval Air Stations, aviators from five fixed wing platforms were selected for interviews: F-14 Tomcat, F/A-18 Hornet, P-3C Orion, EA-6B Prowler, and E-2C Hawkeye.

## **E. ORGANIZATION OF STUDY**

The remainder of this thesis is organized into four chapters. Chapter II reviews previous studies related to the research of military aviator retention. Chapter III describes current retention data. The first part of Chapter III analyzes recent trends in naval aviator retention. The second part of Chapter III describes the Argus Career Milestone Tracking System as well as Argus data detailing current factors that affect retention. Chapter IV discusses the interview process, the selection of the interviewees, and the information obtained from the interviews. Lastly, Chapter V offers conclusions and presents recommendations based on the information from the previous chapters.

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## **II. LITERATURE REVIEW AND SUMMARY**

### **A. LITERATURE REVIEW**

Many studies examine the complex issue of retention from different perspectives, however there has been little work devoted exclusively to the retention of naval aviators. Because the skills and experience of qualified naval aviators are in demand and hard to replace, naval aviator retention has provided policy makers with particular challenges.

Of the research done on naval aviator retention, seven of the works are reviewed below. These studies include analysis of both economic and non-economic factors. The studies can be divided into three categories, focusing on different factors: job satisfaction issues, economic factors affecting aviator retention, and bonus implementation studies.

### **B. STUDIES OF JOB SATISFACTION ISSUES**

- 1. Daniel J. Sullivan, “Job Satisfaction Among United States Navy and Marine Corps Aviation Officers – A Study of the Impact on Career Retention,” Thesis, Naval Postgraduate School, September 1998**

This study used a statistical model to examine and predict aviator retention behavior. A one-page survey was developed to measure job satisfaction and then administered to a large group of aviators. While not specifically stated, this survey was administered prior to the study publication data of September, 1998. Due to deployments, the sample group used was not a demographically representative group of Navy and Marine Corps aviators, however the results were weighted to give a more representative outcome. Training-command and non-flying-command aviators were not used. A total of 1,669 active duty aviators provided the sample group for the statistical analysis of the survey results.

The expected findings were that higher levels of the “pay satisfaction” factor would correlate directly with the intent to stay in the naval service. High levels of

“organizational satisfaction” in the Navy and Marine Corps were also predicted to positively correlate to intent to stay in the service.

A logistic regression model was run using as the dependent variable a binary variable reflecting one’s desire to stay in the service. The independent variables included among others, rank, age, aircraft type, marital status, source of commission, designation (pilot or NFO), and flight hours obtained.

The statistical analysis of the results showed that “age and aircraft-type variables best differentiate all aviators.” Because of the high correlation between age and rank of pilots, Sullivan found that “age and rank can be used interchangeably in the analysis.” An aviator’s specific aircraft community was also an important factor in the statistical model for determining intent to leave the service. The model predicted that for junior aviators in the O3 (Lieutenant) pay grade, little statistical evidence existed that changing variables in any combination would have much effect on the desire to leave the service, except in specific platform communities that are well manned and not experiencing a decrease in flight time. In those communities changes in “Pay” and “Organizational Satisfaction Issues” can have a positive effect on retention. This means that within specific platform communities, if there is adequate manning and ample chance for pilots to fly, then “Pay” and “Organizational Satisfaction Issues” can have an effect. In platforms that are undermanned and experiencing a decrease in flight time, there is little effect on retention by changing other variables. Sullivan found that in ranks other than O-3, “aircraft type is the prime factor which delineates ‘leavers’ from ‘stayers’.” For other than O-3s, helicopter pilots had the best chance to remain in the Navy.

The survey showed responses to different questions by all aviators. When asked about their feelings toward job “fulfillment/challenge,” the aviators surveyed gave this reason their highest positive feelings to remain in the Navy. The level of “camaraderie/esprit de corps” was the second highest positive level of job satisfaction. The highest level of discontent was shown in the question about the “current value of eventual retirement benefits.” The question of “adequacy of temporary duty

compensation/reimbursement” showed the second highest level of discontent among aviators. Another negative response that was noted by Sullivan was “length of working hours.”

In open-ended questions, over twenty-five percent of aviators gave work satisfaction reasons for desiring to leave the service. These reasons included “low flight hours (or an inappropriate amount of work),” “inadequate resources (aircraft, parts, manning, etc.) to complete work,” and an “unfavorable mix of flying versus collateral duties.” Over twenty-five percent of the respondents said they were expected to have “unreasonable amount of time away from home” and listed that as one of the four top reasons to leave the service.

In the same open-ended questions, the most prominent responses for reasons to remain in the service were “fun and exciting work,” “challenging work,” and “rewarding and worthwhile work.” Sullivan also noted that “aviators commonly identified satisfaction issues with their co-workers as a significant reason why they would stay in the service.”

One last important piece of information found by Sullivan in the demographics section of his survey was the level of spousal education. Sullivan expressed surprise to see that over fifty percent of the aviators’ spouses had college degrees with an additional twenty percent having some post-graduate education. He also found that the “level of education among aviator spouses may be increasing.” He theorized that higher level of education among spouses may correlate to a high earning potential and therefore may add to a lower level of job satisfaction for the aviator at every relocation.

**2. R. Gordon Lawry II, “A Statistical Analysis of the Effect of Flight Time on Naval Aviator Retention,” Thesis, Naval Postgraduate School, September 1993**

This research investigated the relationship between flight time and the retention of naval aviators. Flight time in this study is the total number of flight hours flown by the

pilots in the first five years as an aviator. This study hypothesized that there is an inversely proportional relationship between a propeller pilot's flight time and retention, while there is a directly proportional relationship between jet and helicopter pilot flight time and retention. Flying in the propeller communities, the study reasoned, is much closer to airline flying and therefore more readily transferable to the civilian sector. It is hypothesized that a propeller pilot's principal objective may be to gain flight time in order to become a commercial pilot, thus the more flight hours the pilot accumulates, the more likely to leave the service. The study also hypothesizes that helicopter and jet pilot flight time is not as theoretically transferable to commercial airline flying resulting in a lower chance of being hired for commercial airlines. This makes flight time more intrinsically important so more flight time leads to greater military job satisfaction and therefore the desire to remain in the service.

The data were derived from three different sources. Flight hours were obtained from the Navy Safety Center's records of aviator flight hours. These data were then matched with social security numbers to the Defense Manpower Data Center's Officer Master File and Loss File (OMF). The merged data were then verified against the Naval Personnel Research and Development Center's database. After eliminating non-standard data points, 3,225 observations remained from fiscal years 1980 through 1992.

Data from the Future Airline Professionals of America were used for airline wages, while airline hiring data were obtained from the Bureau of Labor and Statistics. Because of this new dataset, the analysis was limited to aviators whose first voluntary chance to exit the service occurred on or after 1985. With the new information, the observations were now limited to 3,023 aviators. The group was then broken into the three major aviation communities, jet, propeller, and helicopter, to mitigate differences between each community's retention.

The analysis focused on whether naval aviators would leave or stay at the end of their Minimum Service Requirement (MSR), which is the first opportunity for voluntary separation. A binomial multivariate analysis was used to determine if flight time was more or less likely to determine retention among the three different aviation sub-communities. The independent variables were the total number of flight hours flown by

the pilots in the first five years as an aviator, the average annual starting salary for the major airlines, and the number of pilots hired by the airlines, as well as the binary demographic information as to whether the pilot was single or married, did or did not have children, and was or was not a Caucasian.

This study found that propeller pilots were the most likely to leave the Navy with increasing flight time but, contrary to his expectations, jet pilots were also more likely to leave the Navy with an increase in flight time. A possible explanation presented is that jet and propeller pilots both flew planes similar to commercial aircraft making them more readily adaptable to airline flying and therefore more desired by the airlines. It is also explained if fixed wing pilots in general have some self-selection bias. This bias could result from individuals who want to become commercial pilots choosing to fly a fixed wing (propeller or jet) platform in order to become a commercial pilot. No statistical significance was found for flight time as a predictor of helicopter retention. The analysis also found that civilian airline hiring was a significant factor affecting retention among all aviators.

## **C. STUDIES OF ECONOMIC FACTORS AFFECTING RETENTION**

### **3. William R. Bookheimer, “Predicting Naval Aviator Attrition Using Economic Data,” Thesis, Naval Postgraduate School, March 1996**

In this study, Bookheimer asked the following research questions:

- Can a model be built, using economic indicators and other information available to planner, to accurately predict naval aviator retention?
- What effects do various economic measures have on naval aviator attrition rates?

The study used economic data (and specifically incorporates airline hiring as an economic factor related to Naval aviators) to help predict retention in junior aviators, with between 5 and 12 years of service.

The study used aggregated data from a database created from the Officer Master File maintained at the Defense Manpower Data Center. Pilots under obligated service of various types were eliminated from the data set. The aviators included in the data were past their Minimum Obligated Service (MOS) and before their 12 years of service (YOS) mark for fiscal years 1978 through 1990.

The dependent variable selected for the statistical analysis is the attrition rate for pilots. The sample selected was subdivided into three general platforms that the aviators flew (propellers, jets, and helicopters), each broken down into 5-8 YOS and 9-12 YOS. Each of the six groups was analyzed separately. The independent variables were national and professional unemployment rates, a composite index of leading economic indicators, the airline hiring status, and airline-to-military pay ratio.

Three regression models were used on the data. The results showed that no single model was best for all six groups. The models yielded the following information:

- A univariate regression model using the national unemployment rate as the prediction factor was the model that most effectively predicted attrition of jet and propeller pilots with YOS 5-8. The data showed that the higher the unemployment rate, the lower was pilot attrition.
- Attrition rates for YOS 5-8 and YOS 9-12 were substantially different. YOS 5-8 had the highest attrition.
- The national unemployment rate had a negative effect on attrition rates and was the strongest and most consistent predictor of pilot attrition.
- Airline hiring rates and changes in airline hiring did not have a noticeable effect on pilot attrition given the national unemployment rate.

**4. Claire Mitchell Levy, “The Civilian Airline Industry’s Role in Military Pilot Retention” RAND Corp., 1995**

Levy (1995) found a perception by military aviators that the civilian airline sector experienced less hardship in both time away from home and amount of work. While exit surveys of Air Force pilots showed that airline hiring was the number one motivator for leaving the service on exit surveys, naval aviators cited family separation as the leading factor. With the potential for a large increase in salary as a civilian underscoring the belief that airlines draw away military pilots, the military has seen the airlines as a major obstacle toward military aviator retention.

This analysis examined the historical connection between airline hiring and military retention. While definite periods of time existed where civilian airline hiring increased while military retention decreased, periods of increased retention while the airlines were hiring also existed. In 1977 and in 1983, for example, airline hiring went dramatically up and military retention dropped. The inverse happened in 1979 when the airlines decreased hiring and military aviation retention increased. However, there have been times that airline hiring and military retention rose and fell together. From 1980 to 1983, airline hiring and military aviator retention rose together, while between 1985 to 1988 airline hiring and military aviator retention decreased simultaneously.

As this study points out, airline hiring is not the sole reason responsible for decreases in military aviator retention; therefore policies affecting military retention need to be addressed. “Clearly, other factors, such as military career opportunity, time separated from families, and overall morale can and do have significant impact on the retention of military pilots. Time and effort should be given to examining the effects of these other factors on the retention of military pilots.” (Levy, 1995)

**D. STUDIES OF BONUS PROGRAMS FOR AVIATOR RETENTION**

**5. H. E. Mills, “An Analysis of the Effect of Aviator Career Continuation Pay (ACCP) Using an Annualized Cost of Leaving (ACOL) Approach,” Thesis, Naval Postgraduate School, September 1999**

Using an Annualized Cost of Leaving (ACOL) model, Mills (1999) analyzed the effect of introducing the proposed Aviator Career Continuation Pay (ACCP) bonus program in 1998 for the retention of naval aviators. The Aviation Continuation Program (ACP) program targeted aviators in different sub-communities based the level of retention in that sub-community. This resulted in the ACP program giving a different amount of monetary bonus to aviators based on their designator, pilot or NFO, and on the type of aircraft flown. The bonus was geared toward keeping pilots with the lowest retention rates in their individual communities.

In 1999, the current ACCP program began, which only separates bonuses by designator (pilot and NFO) and not by aircraft flown.

The study had two research goals:

- Develop an ACOL model for aviators eligible for bonus payments under the ACP program. Determine from the models of ACOL factors the monetary equivalent preference for remaining in the military.
- Develop a logit retention model from the critical monetary equivalent ACOL factor and dependent data to predict the effect of ACCP on aviator retention.

The study used data from the Department of Defense Manpower Data Center's Officer Master Files integrated with data from the Naval Military Personnel Command regarding officers who had received an ACP bonus. Data were limited to fiscal years that ACP was in effect: 1990 to 1997.

The analysis looked at four different points at which an aviator may leave the service: the 9, 11, 16, and 21 years-of-service mark. These data points were examined through a regression model for naval aviation as a whole as well as for specific platform sub-community.

The study found that ACCP is likely to increase aviator retention at the 11, 16, and 21 years-of-service mark. The study also found the Annualized Cost of Leaving

amount proved to be a statistically significant factor in the retention decision, and yielded a 19.68 percent increase in the likelihood of aviator retention between 11 and 20 years-of-service.

**6. Carol S. Moore and Henry S. Griffis, “Evaluating the Navy Aviation Career Continuation Pay Proposal,” Annotated Briefing, Center for Naval Analyses, February 1999**

This study by the Center for Naval Analyses analyzed the expected change in naval aviator retention due to the shift in aviator bonus programs. ACP was being replaced by the new ACCP program, as noted above in the discussion of Mills.

The ACP paid aviators based on the amount of the predicted department head tour shortages per promotion year group and platform. Helicopter pilots, a group with a historically higher retention rate, did not receive bonuses while certain jet communities were eligible for as much as \$25,000 a year. One of the problems found was that some aviators who were taking the ACP bonus were not staying to the department head level; about 10-30 percent of those who took an ACP contract attrited from their aviation career before completing their department head tours. The study also found that the incentive of a twenty-year retirement improved aviator retention after the department head tour.

The new ACCP program differed in that it would pay a flat bonus rate to all aviators regardless of platform flown. NFOs would also now get a bonus but at a lower level than Naval aviators. Moore-Griffis (1999) analyzed the transition period following the conversion of ACP to ACCP. The study assumed naval aviators based their decision to stay or leave on the present value of the bonus earnings that would be received from their minimum service requirement (MSR) until retirement. The value of the bonus was the sum of all bonus money an aviator would make assuming he or she had maintained an ideal career path through the aviation community, i.e., department head, executive officer, and commanding officer. Because the general training pipelines for the propeller, helicopter, and jet aircraft differ in length, the MSRs of these three groups are generally different. As a result, jet pilots have a longer MSR than propeller or helicopter pilots;

therefore jet pilots are not eligible for as many years of bonus money, which reduces the overall worth of the ACCP bonus to jet pilots. However, the study notes that feelings of inequality in bonus money can lead to reduced retention in communities that previously had good retention. The study also incorporates a basic assumption about pilots' perceptions of the worth of the bonus. The assumption is that optimistic pilots see themselves adhering to a normal career path where they succeed in screening for command. On the other hand, some pilots will have the expectation that they have only an average chance of screening for command and receiving all the bonus money associated. Thus, optimistic pilots will value the ACCP more than aviators with average expectations.

The analysis predicts the new policy will have little or no effect on jet pilot retention. Because jet pilots already receive the most sizable bonus under the ACP program, they do not really expect an increase in offered bonus money under the new program. The analysis also found that retention in the propeller, helicopter, and NFO communities would increase significantly because they were going from no bonus or low bonus conditions to the much higher ACCP bonus. This was actually stated as a short-term solution for propeller and helicopter retention. If retention continued to become a larger problem, paying increasingly higher bonuses could become necessary. It was possible then that ACCP would initially cost between \$1.5 and \$7.5 million more annually without increasing the retention in the jet community.

Moore-Griffis (1999) predictions appear to be borne out by results, as will be seen in chapter 3. Jet pilot retention has increased little since ACCP has been implemented, but retention of other pilots has risen sharply.

**7. Carol S. Moore, "Ideas for the Marine Corps Aviation Retention Bonus Program," Annotated Briefing, Center for Naval Analysis, July 1999**

The Marine Corps does not operate under the Navy bonus system. Between fiscal years 1990 and 1996 the Marine Corps offered a six thousand dollar contract to pilots in

communities with pilot shortages, while at the same time the Navy was offering up to \$12 thousand a year in ACP bonuses. In fiscal year 1997, the Marine Corps began offering \$12 thousand a year bonuses to match the other services. With the changes to the law allowing service branches to increase aviation bonuses to \$25 thousand a year (ACCP for the Navy), the Marine Corps wanted the answers to two questions:

1. What years of service should be targeted with a bonus and at what level?
2. What are the bonus levels needed to meet retention goals for each platform?

Moore (1999) shows that the Marine Corps was only at 72 percent of FY-00 requirements for fixed wing pilots while at the same time was at 150 percent of requirements for NFOs. The study suggests that the surge in civilian airline hiring has prompted the need for re-examining retention bonuses.

Aviators were found to have the “greatest risk of leaving” during the years the following their initial commitment incurred from pilot training, usually YOS 7-10. The data contained several year groups and training pipelines that had varying durations, leading to different lengths of initial commitments. The study also found that for Marine Corps pilots, while retention remained low through YOS 13, after that there were minimal losses. The study suggests then that bonuses are not needed after the rank of O-4.

Like Navy ACP, the Marine Corps used individual communities of aircraft type to target bonuses based on that community’s specific retention needs. The study uses a statistical model to predict bonus levels for specific platform communities. FY-97 data were the most recent year of complete data available at the time of the study. The FY-97 data were used for the Cumulative Continuation Rate of 7 to 14 years, the time after pilots complete their initial commitment through the O-4 rank.

The model predicted that there were very apparent differences in the amount of bonus necessary for retention targets for separate communities based on platform and designator (pilot or NFO). F/A-18 Pilots would need the largest bonuses followed by the other fixed wing Marine Corps platforms, with either a very small to no bonus offered for the different helicopter platforms. The NFOs were also found to not need a bonus for

targeted retention. The model showed that the Marine Corps would need to spend almost six million dollars per year over the next several years to eliminate current shortages.

The main conclusion of the study was that different communities would require varying bonuses in order to meet their requirements. Annual bonuses of not less than \$16,000 for fixed wing, and no greater than \$6,000 for rotary wing pilots were recommended. The study did not recommend bonuses for NFOs at all. Instead of going to a standard across-the-board bonus, the study recommends using the savings “toward supporting aviation equipment and supply readiness—a step that could also improve aviator retention.” (Moore, 1999)

Because the Marine Corps places a lot of value on equality, it has decided not to separate the bonus by aircraft type and has since increased the bonus based on type of general platform type. Fixed wing aviators currently receive \$12,000 a year and rotary wing aviators receive \$9,000 a year.

## **E. LITERATURE SUMMARY**

A number of approaches for analyzing naval aviator retention have been attempted. Bookheimer (1996) and Levy (1995) focused primarily on using economic issues to predict aviator retention. They found that indeed the general U.S. economy and the status of airline hiring and pay play a role in an aviator’s decision to stay or leave the Navy. The studies by Mills (1999), Moore and Griffis (1999), and Moore (1999), focused on the impact of monetary bonuses on aviator retention. All of the studies found that bonus programs had a positive effect on retention. The problem is that bonus programs are expensive and cannot seem to consistently solve all the retention problems in the different aviation communities. Moore and Griffis (1999) and Moore (1999) suggest when bonuses are targeted at certain low retention aviation communities, this causes a feeling of inequality within communities that had good retention. Conversely, a bonus program like ACCP aimed across the board to provide equality can increase the total bonus cost to the Navy but not improve retention to communities that were low in retention and already receiving the bonus. Moore and Griffis (1999) found the ACCP

program would likely require up to \$7.5 million more annually than ACP without increasing the retention rate in the jet community.

The study by Sullivan (1998) goes beyond economic situations and bonus programs and uses a survey of aviators to examine job satisfaction indicators of retention. After collecting survey data, he used a statistical model to predict aviator retention. Sullivan (1998) examined aviators from all points in their careers, he did not look specifically at junior officer aviators that were approaching the end of their initial commitment, the time they are most likely to leave the service (Moore, 1999). For this group he concluded that “once in pay grade O3 few variables, in any combination, diminish the intent to leave.” (Sullivan, 1998)

Most of the studies have broken the data into groups either by platform type (propellers, helicopters, or jets) or by actual platforms (i.e., F-14, F/A-18, P-3, etc.). The Sullivan (1998), Bookheimer (1996), Lawry(1993), and Moore and Griffis (1999) studies all found that retention differed by platform type. Sullivan and Mills both found that specific aircraft type (i.e., F-14, F/A-18, P-3, etc.) was an important factor in predicting aviator retention.

In summary, most of the literature has focused on the relationship between monetary compensation and retention. While compensation is important, other factors also play a role in retention, as Sullivan (1999) and Lawry (1993) show. This study is concerned with many of those other factors. Here the focus is on junior officer aviators who are at or approaching the end of their initial commitment to the Navy because they are the most likely to leave the service (Moore, 1999). Like Sullivan (1999), this analysis concentrates on job satisfaction issues, but unlike his study that was based on a survey, this study utilizes current data from the Navy’s new Argus Career Tracking and Milestone system and compares that data to information gained through interviews.

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### **III. AVIATION RETENTION DATA AND DATA FROM THE ARGUS CAREER MILESTONES TRACKING SYSTEM**

This chapter first examines the retention in the naval aviation community. Secondly, the Argus Career Milestone Tracking system is explained. Third, the results of the Argus data are examined for factors affecting the retention of junior officer fixed wing aviators.

#### **A. CURRENT RETENTION**

Cumulative Continuation Rates (CCRs) measure the propensity of aviators in their seventh year of service to remain on active duty at the end of their twelfth year of service, which roughly corresponds to the end of their department head tour. Appendix A, Table A.1 shows the Cumulative Continuation Rates for all aviators from fiscal year 1985 through fiscal year 2000. These data are unpublished and were obtained from the Aviation Community Manager's Office. The data are in percentage form and therefore the actual number of officers for each year is unavailable.

It is important to note that in 1989, changes to legislation resulted in an increase in the minimum obligated service (MOS) for aviators. The MOS is the commitment incurred after completing aviation training and receiving wings. This obligated service increased to six years for NFOs, seven years for propeller and helicopter pilots, and eight years for jet pilots. Because of this, seven years later, in 1996, there appears to be an increase in the CCR for pilots. This increase is artificially driven by the increase in minimum obligated service (McKenzie, 1999).

Looking at the historical retention averages in Table 1, several factors can be noted.

**Table 1. Historical Cumulative Continuation Rate Averages  
for Fiscal Years 1985-2000**

Type of Aviator	Historical Retention Average (Percentage)
ALL PILOTS	36.60
JET PILOTS	36.61
PROP PILOTS	24.72
HELO PILOTS	48.31
ALL NFOS	46.80
JET NFOS	47.10
PROP NFOS	45.74

SOURCE: Office of Naval Aviation Community Manager

When comparing pilots to NFOs a very distinct difference can be seen. As has been noted some years ago in the literature (Cymrot, 1989), pilots have a much lower retention average compared to NFOs. As shown in Table 1, pilots have averaged a ten percent lower retention rate compared to NFOs over a 16 year period. This difference remains when comparing Pilots and NFOs from the same general community. Jet pilots had a 36.61 percent retention average whereas their jet NFO counter parts had a 47.1 percent retention average. Similarly, over the same time period, propeller pilots had a 24.72 percent average retention while propeller NFOs had 45.74 percent retention.

Over the same time period, helicopter pilots, who are the only major aviation community without NFOs, had a 48.31 percent average retention, which puts their historical retention at about the same level as the NFO community. It has been noted that the option of leaving the Navy for the commercial airlines is generally more open to fixed wing aviators, jet and propeller communities, due to the experience gained and similarity to fixed wing aircraft flown by the airlines (Lawry, 1993).

Lastly, it must be noted that there is a large historical disparity among the three major naval aviation communities. The helicopter community has the highest retention average of 48.31 percent and at almost 12 percent less is the jet community with 36.61 percent retention. This is still much higher than the propeller community, which has a 24.72 percent historical retention CCR, almost 12 percent below the jet community.<sup>1</sup>

Because fixed wing aviation, the jet and propeller communities, have the lowest historical retention, Table 2 shows the historical retention among the five fixed wing communities, two propeller (VP and VAW) and three jet (VFA, VF, and VAQ) that will be examined throughout this thesis.

**Table 2. Historical Pilot Cumulative Continuation Rate Averages by Aircraft Community for Fiscal Years 1985-2000**

<b>Aircraft Type</b>	<b>Historical Retention Average (Percentage)</b>
<b>Pilots</b>	
VFA (F/A-18)	41.15
VF (F-14)	37.10
VAQ (EA-6B)	43.35
VAW (E-2C)	30.71
VP (P-3)	24.27

SOURCE: Office of Naval Aviation Community Manager

Among the five fixed wing platforms, there is a wide variety of historical retention averages. It is noticeable that the two propeller platforms, the VP (P-3) and VAW (E-2C), have the lowest historical retention of the five. All three jet platforms examined have higher retention averages. What is important here is that there are retention disparities between aviators of different platforms within the fixed wing aviation community.

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<sup>1</sup> Note that the jet retention is higher than the propeller retention by almost the same amount that the helicopter retention is to the jet retention. Lowery (1993) hypothesizes that propeller pilots may self select propellers in order to obtain the experience necessary to become commercial aviators, thus establishing a selection bias between jet and propeller pilots in the fixed wing aviation community.

Even in more recent years, the disparities in CCRs are evident. Table 3 shows the CCRs for the years of 1998-2000.

**Table 3. Pilot Cumulative Continuation Rate Averages by Aircraft Community for Years 1998-2000**

<b>PILOT CCRs (Percentages)</b>			
<b>FISCAL YEAR</b>	<b>98</b>	<b>99</b>	<b>2000</b>
<b>PILOT</b>			
VFA (F/A-18)	40	40	37.35
VF (F-14)	45	36	58.02
VAQ (EA-6B)	60	58	62.73
VAW (E-2C)	20	20	42.81
VP (P-3)	19	16	32.53

SOURCE: Office of Naval Aviation Community Manager

In all three years, there are large differences in CCRs between platforms. These differences may have many explanations. There are economic factors as those looked at by Bookheimer, Mills, Moore and Griffis. However, factors such as civilian unemployment rates presumably affect all pilots, and factors such as airline hiring and airline salaries affect all fixed wing pilots. Only fixed wing communities are represented in Table 3. Thus, these economic factors are unlikely to be the key explanations for the differences in retention rates. The bonus program is also an economic factor here. The ACP program, which was in effect for 1998 and 1999, selectively targeted certain platforms with different levels of money. However, the ACCP program in place in 2000 offers the same bonus equally to all aviators. As predicted in the bonus studies, communities that did not previously have a large bonus had a dramatic increase in retention (VP and VAW), while communities that were already receiving the bonus had little change (VFA and VAQ) (Moore and Griffis, 1999). Interestingly, the VF pilot community, which from FY 1995 to FY 1998 was eligible for the same bonus as the VFA pilot community (Mills, 1999), saw a dramatic increase in retention in FY 2000, leading to the conclusion that there must be some other factor affecting VF community retention. In summary, bonuses and other economic factors do not provide a full explanation for

retention disparities between aviators of different platforms within the fixed wing aviation community. Other platform specific factors are worth exploring.

## **B. ARGUS CAREER MILESTONES TRACKING SYSTEM**

The Argus Career Milestones Tracking System is a branching, web-based survey. Argus went online via the internet in February of 2001. OPNAV Instruction 1040.10 (7 May 01) states:

Retention of quality trained personnel is paramount to the future of Navy. Information on influences affecting retention behavior must be gathered and analyzed to support compensation, personnel, and policy decisions. Argus has been developed to gather specific data from Navy personnel at important milestones and to provide Navy leadership with Fleet direct information to influence future quality of service improvements back to the members.

The Argus survey is directed at both enlisted sailors and naval officers to gather information that will be useful in shaping policies that will affect retention. In OPNAV Instruction 1040.11 (29 May 01), which is the outline for the Navy Retention Program, Naval Personnel Command, NAVPERSCOM (PERS-00R), is given the responsibility to “collect and analyze Argus Career Milestone Tracking System data” and then “disseminate processed data to Fleet/Echelon 2 commanders with subsequent proposed program/policy changes as required.”

Argus replaced the Navy exit survey, which was administered to service members departing from the Navy. This previous exit surveys had only about nine percent participation, providing very limited data on causes of attrition. This survey also gave no data for those who had chosen throughout different career points to remain in the Navy. Thus there was no way to compare the data from those staying to those leaving.

Argus is designed to provide career decision information about both people choosing to leave and to stay in the Navy. Argus focuses on what factors are influencing someone’s decision to stay in or leave the Navy instead of on his/her satisfaction or dissatisfaction. This is accomplished by tracking an individual’s career decisions at transition points throughout his/her career (NPRST, 8 January, 2000). OPNAV

Instruction 1040.10 (7 May 01) states that all Navy commands will offer, not require, their assigned personnel the opportunity to complete the Argus questionnaire at these milestones for officer careers:

- Acceptance of promotion
- Execution of PCS orders (completed at departing command)
- Resignation
- Completion of active duty service obligation to include retirement
- Separation from naval service (voluntary and involuntary)
- Return to active duty
- Change of status to and from limited duty
- Transfer from active duty Naval Service to Naval Reserve, National guard, or another service
- Or at Command discretion (Individual or command-wide basis)

Because the Argus online questionnaire is branching, it changes based on the information and responses provided. The Argus questionnaire structure can be broken up into four parts. The first part is the demographics section. Information from this section includes the unit identification code (UIC), social security number, which of the career milestones listed above was the reason for completing the survey, gender, marital status, number of children, race, pay grade, designator, and most importantly in this thesis, which community in the Navy the individual is currently serving in.

When an aviator is asked which community he/she is serving in, the choices are: Unrestricted Line, Restricted Line, Staff, and Other. Choosing unrestricted line brings up the choices: Surface, Submarine, Aviation, Fleet Support, Special Operations, and Special Warfare. Once the aviator chooses Aviation, the Aviation option branches out to the choices: Fixed Wing Fighter, Fixed Wing Other, Rotary, and Other. It is important to note that at this point there is no further branching. The respondent is not asked to select an individual platform, nor to select pilot vs. NFO. This means that to get separate

pilot and NFO information, the database has to be cross queried by both aviation subcategory and by designator. With information on individual platforms, researchers could partition the data into any groups that were desired for study.

The four communities under Aviation also lack clear definitions and the lack of definitions can mislead respondents to misclassify themselves. One interpretation could be that only the F-14 and F/A-18 platforms fall under the Fixed Wing Fighter branch of Aviation. This leaves all other fixed wing aviators to fall under the Fixed Wing Other category. The Fixed Wing Other category is now a disproportionate amount of aviators and would include carrier based tactical jets (EA-6B, S-3), carrier based props (E-2C, C-2), land based jets (E-6A) and land based props (P-3C, and EP-3). Another possible interpretation is that both S-3 and EA-6B pilots, who are tactical carrier jet aviators, might select Fixed Wing Fighter as their category, leading to differences in classification of the same platform. The selection Other is not defined at all. The first three choices, Fixed Wing Fighter, Fixed Wing Other, and Rotary should encompass all current Navy platforms. This makes the choice Other unnecessary.

The second part of the Argus questionnaire asks the individual about key factors that would influence him/her to stay or leave the Navy. Some of these topics include: promotion opportunities, career assignments, command climate, time away from home, current job satisfaction, impact on family, leadership, pay, and retirement. Everyone answers the basic questions with a number from one to seven, with one being an influence to stay, four being neutral, and seven being an influence to leave. If the individual answers with other than a neutral response, further branches of that question may be asked. For each individual, Argus will automatically make a list of items that the individual has indicated is an influence on his/her decision to stay in or leave the Navy. The individual will then have the opportunity to select from the list up to the five most important issues to stay and then the five most important issues influencing him/her to leave the service.

The third part of the Argus questionnaire asks the individual about his/her career intentions. This includes: civilian job opportunities, career commitment, and career information. The last part of the survey is still to be added. It will be a section reserved for

“Hot Button Items.” These questions can be inserted into the survey to ask about current topics. (Argus Career Milestone Tracking System Briefing Outline, 2000)

It is important to note that the Argus database is continually and automatically updated. Using the social security number as a reference, it will update demographic and survey response information so that at any query, only the most recent responses of all users will be computed and factored into the analysis.

### **C. ARGUS DATA**

When queried for certain demographic groups, Argus will generate two lists by frequency of response. One list is the top 30 most important factors for the individual in the queried group to consider staying in the Navy, the other list is the top 30 most important factors influencing his/her decision to leave the Navy. It is important to note that raw Argus survey data are not available for use, only the results. This limits the analysis and does not allow for statistical analysis of the results, limiting the data available to the ordinal rankings of reasons to stay and reasons the leave the Navy for defined demographic groups.

The Argus results used in this study were obtained from the database on 16 December, 2002. These full lists can be found in Appendix B. The first column labeled “all” shows, in the order of frequency, the top thirty most important influences to stay in or leave the Navy. The following five columns are labeled zones A, B, C, D, and E. These zones represent the responses of the desired demographics with different Years of Service (YOS).

- Zone A: 0-5 YOS
- Zone B: 6-10 YOS
- Zone C: 11-15 YOS
- Zone D: 16-20 YOS
- Zone E: 21+ YOS

In this study, the Argus lists of reasons to stay in the Navy and reasons to leave the Navy are both examined to establish that as sub-communities are examined within larger communities, their priority of responses will change. Since this study is examining the retention of junior fixed wing aviators, the Zone B group (YOS 6-10) is the primary focus because that is the group that holds the seven and eight YOS upon which the CCRs for aviation are based. Three comparisons are made below. The Zone B aviators' reasons to consider leaving or staying in the Navy are compared with the reasons Argus has listed for all Zone B officers, and with senior (Zone C and Zone D) aviators. Also, all aviators (Zones A through E) are compared with all Unrestricted Line (URL) Officers. URL officers are used because they are combat officers. This group excludes medical officers, dental officers, Judge Advocate General officers, etc. This leads to a group that is closer in mission focus for comparing reasons to leave or stay in the Navy. Only the top ten reasons from the list of thirty generated by Argus are used here. There are over ninety possible reasons that can be used. A list of other Argus factors is contained in Appendix B.

Ideally, comparisons would be made between mutually exclusive groups, but unfortunately the data available do not permit the use of mutually exclusive groups in two of the three comparisons below. Thus, it would be preferable to compare all aviators with all non-aviator URL officers, and all Zone B aviators with all Zone B non-aviators. In fact, all aviators are compared with all URL officers including aviators, and all Zone B aviators are compared with all Zone B URL officers including aviators. Obviously, this means that differences in the priorities of responses between aviators and others are actually greater than is revealed by the tables below.

There are responses from 1613 unrestricted line officers in the Argus database. Of these responses, 490 are aviators. It is important to point out that aviators represent both pilots and NFOs. Respondents are asked to choose platform type: Fixed Wing Fighter, Fixed Wing Other, Rotary, and Other. Unfortunately with only 490 aviators (both pilots and NFOs), there were not enough data points for Argus to disaggregate stay and leave lists for these smaller sub-communities.

### 1. All Aviators vs. All Unrestricted Line Officers

A comparison of the top ten reasons to leave the Navy between all aviators and all unrestricted line officers is shown in Table 4. The 490 aviators are included in the group of 1613 unrestricted line officers. The comparison between aviators and URL officers is important because differences between the two groups can give insight into their particular retention problems.

**Table 4. Comparison of Argus Top 10 Reasons to Leave the Navy between All Aviators and all Unrestricted Line Officers**

<b>All Aviators</b>	<b>Reason to Leave</b>	<b>All URL Officers</b>
1	Availability of supplies	1
2	Trust Navy leadership	3
3	Advancement/Promotion Opportunities	2
4	Control over PCS assignments	6
5	PCS moves on spouse career	11
6	Red tape to do job	5
7	Medical Care for family	15
8	Impact of Navy on family	4
9	Repair parts needed	26
10	Separation from family/friends	9

SOURCE: Argus Data, 16 December, 2002.

Aviators and unrestricted line officers share the same top three reasons to leave the Navy as well as seven of the top ten. However, “PCS moves on spouse career” is given as the number five reason to leave for aviators while it drops to eleven for all unrestricted line officers. The most notable difference is that “repair parts needed” is number nine for aviators and drops all the way down to twenty-six for unrestricted line officers.

A comparison of top ten reasons to stay in the Navy for both aviators and unrestricted line officers is given in Table 5.

**Table 5. Comparison of Argus Top 10 Reasons to Stay in the Navy between All Aviators and all Unrestricted Line Officers**

<b>All Aviators</b>	<b>Reason to Leave</b>	<b>All URL Officers</b>
1	Current job satisfaction	1
2	Job interest	4
3	Family support	2
4	Opp to work in primary rate/designator	10
5	Camaraderie	8
6	Senior officer leadership quality	5
7	Advancement/Promotion Opportunities	3
8	Level Responsibility	6
9	Immediate supervisor leadership quality	7
10	Unit morale	14

SOURCE: Argus Data, 16 December, 2002.

While nine of the top ten reasons to stay for aviators and unrestricted line officers are the same, a difference between the two groups of officers can be seen. The biggest difference is that “opportunity to work in primary rate/designator” is the number four reasons to remain in the Navy for aviators while that drops to number ten for all unrestricted line officers. This reason as well as “current job satisfaction” and “job interest” show that one of a pilot’s prime reasons to remain in the Navy is the ability to continue flying.

It is apparent from the Argus database that as the sub-communities of larger groups are examined, changes in the priorities of reasons, or the reasons themselves, to leave or stay in the Navy, can change.

## 2. Comparison Between Junior Officers YOS 6-10

There may be problems unique to junior officer aviators. By holding junior officers constant, a comparison between junior officer aviators and other junior officers can be made. Below is Table 6, which shows the top ten reasons to leave the Navy for junior officer aviators (YOS 6-10) compared to the larger groups that they are a part of, the junior officer line officers (YOS 6-10) and all junior officer (YOS 6-10).

**Table 6. Comparison of Argus Reasons to Leave Among Junior Officer Aviators (YOS 6-10) and All Junior Officers (YOS 6-10)**

<b>Junior Officer Aviators YOS (6-10)</b>	<b>Reason to Leave</b>	<b>Unrestricted Line Officer YOS (6-10)</b>	<b>All Junior Officers YOS (6-10)</b>
1	Availability of supplies	1	1
2	Trust Navy leadership	2	2
3	Red tape to do job	5	4
4	PCS moves on spouse career	11	9
5	Repair parts needed	16	.
6	Number personnel	22	18
7	Senior officer leadership quality	7	5
8	Control over PCS assignments	4	6
9	Impact of location on spouse career	26	23
10	Respect Navy leadership	13	17

SOURCE: Argus Data, 16 December, 2002.

It can be seen that availability of supplies is the number-one reason most junior officers think about leaving the service. Trust in Navy leadership is across the board the number-two reason for junior officers to consider leaving the service. Junior officer aviators and junior URL officers only share five of the same top ten reasons to leave the Navy. Interestingly, the number-four reason for junior officers to leave the service is that PCS moves have a negative effect on spouses' careers. This is only the number-eleven reason for Unrestricted Line junior officers and number-nine for all junior officers. The number-nine reason for a junior officer aviator is the impact of location on his/her spouse's career which is only number twenty six for unrestricted line junior officers and

number twenty-three for all junior officers. This suggests that the Navy's impact on a spouse's career is more of a factor for aviators than for non aviator junior officers.

Another important fact to note is that while repair parts needed is the number-five reason for junior officer aviators to think about leaving, it drops to number fifteen for unrestricted line junior officers and is not even in the top thirty reasons for all junior officers. This indicates that naval aviators feel a lack of parts is a much greater problem in the aviation community than other officers feel it is in their communities. Along the same lines, the number-six reason to leave for junior officer aviators is lack of personnel. This again is only number twenty two for junior unrestricted line officers and number eighteen for all officers, again showing that aviators feel a lack of personnel in the aviation community is a problem that is not necessarily an issue for other communities.

Table 7 shows the top ten reasons to Stay in the Navy for junior officer aviators (YOS 6-10) compared to the larger groups of which they are a part, the junior officer line officers (YOS 6-10) and all junior officer (YOS 6-10).

**Table 7. Comparison of Argus Reasons to Stay in the Service Among Junior Officer Aviators (YOS 6-10) and All Junior Officers (YOS 6-10)**

<b>Junior Officer Aviators YOS (6-10)</b>		<b>Reason to Stay</b>	<b>Unrestricted Junior Line Officers YOS (6-10)</b>	<b>All Junior Officers YOS (6-10)</b>
1		Camaraderie	4	4
2		Current job satisfaction	1	1
3		Job interest	6	5
4		Opp to work in primary rate/designator	3	3
5		Senior officer leadership quality	2	9
6		Level Responsibility	8	7
7		Level job challenge	12	13
8		Family support	5	6
9		Availability of detailer	16	25
10		PCS to jobs in good location	18	22

SOURCE: Argus Data, 16 December, 2002.

Examining the reasons to stay for junior officers, there appears to be much less diversity compared to reasons to leave the service. Both junior URL officer and all junior

officers share seven of the top ten reasons to stay in the Navy with junior officer aviators. However, “camaraderie” is the number-one reason junior officer aviators gave as a reason to stay while the unrestricted line officers as well as all junior naval officers (both of which the junior officer aviators are a part) only ranked it as the number-four reason to stay. This was also found by Sullivan (1998) in his study to be one of the most important reasons for an aviator to stay in the service.

The number-nine and number-ten reasons to stay in the Navy are significantly different for junior officer aviators than for the larger groups. The number-nine reason to stay is “availability of detailer” while for URL junior officers this was number sixteen and number twenty-five for all junior officers. This would indicate that aviators feel that they have an easier time with detailer issues than other non-aviator junior officers. Similarly, the number-ten reason to stay in the Navy for junior aviators is “PCS jobs in good locations.” The other two groups are eighteen and twenty two respectively. A problem exists that the reason to leave “Impact of Location on Spouse’s Career” is contradictory to the reason to stay in the Navy “PCS jobs in good locations.” This problem could be because, as previously discussed, aviators are divided into sub-communities by platform flown. Different platforms are consolidated at different locations. The majority of Navy EA-6B Prowlers are flown out of N.A.S. Whidbey Island in Washington state. All Navy F/A-18 Hornets are flown out of N.A.S. Leemore California or N.A.S. Oceana Virginia. All Navy F-14 Tomcats are flown only out of N.A.S. Oceana Virginia, etc. Because of these centralized locations, there is much less diversity in possible duty assignments than for other naval officers. Without being able to examine platform communities of the aviators in Argus, it is difficult to know if certain duty stations are more preferable than others. If aviators from preferred Naval Air Stations responded to Argus, a bias could exist.

### 3. Comparison of Junior and Senior Aviators

There may be problems unique to junior officer aviators not shared by more senior aviators. Below is Table 8, which shows the top-ten reasons to Leave the Navy for junior officer aviators (YOS 6-10) compared to more senior aviators (YOS 11-15 and YOS 16-20).

**Table 8. Comparison of Argus Reasons to Leave Among Aviators (YOS 6-10) and Senior Aviators (YOS 10-20)**

Aviators YOS (6-10)		YOS (11-15)	YOS (16-20)
	Reason to Leave		
1	Availability of supplies	1	1
2	Trust Navy leadership	9	10
3	Red tape to do job	31	4
4	PCS moves on spouse career	14	3
5	Repair parts needed	4	12
6	Number personnel	.	42
7	Senior officer leadership quality	10	29
8	Control over PCS assignments	3	15
9	Impact of location on spouse career	15	46
10	Respect Navy leadership	43	53

SOURCE: Argus Data, 16 December, 2002.

Clearly the largest difference in the comparison is that junior aviators YOS 6-10 share only five of their top ten reasons with the top ten reasons for senior aviators YOS 16-20. In fact, of the top ten reasons to leave the Navy, only numbers one, two, three and four make the top ten list of the senior aviators YOS 16-20. In fact, four of the top ten reasons to leave for junior aviators YOS 6-10 were below number 29 on the list of reasons to leave for senior aviators YOS 16-20. Similarly to the reasons to leave for all junior officers, senior aviators feel that “availability of supplies” is the number-one reason to leave the service. Even more noticeable is that “number of personnel” is the number-six reason to leave the service for junior officer aviators even though more senior aviators (YOS 11-15) did not cite that reason often enough to make the Argus list and the very senior aviators (YOS 16-20) ranked this as number forty-two. Sullivan also found that lack of supplies and personnel were factors in the decision to leave the service (Sullivan, 1998).

Navy leadership also appears to be a point of contention between junior officer aviators and senior officer aviators. “Trust in Navy Leadership” is shown as the number-two reason for leaving the service for junior officer aviators (YOS 5-10) but that number drops to nine for aviators with YOS 11-15 and to number-ten for aviators with YOS 16-20. “Senior officer leadership quality” is the number-seven Argus reason for leaving the service among aviators YOS 6-10, while that number falls to ten for aviators YOS 11-15 and number twenty-nine for aviators YOS 16-20. Even worse is that “respect for Navy leadership” is the number-ten reason given by junior aviators for leaving the service while aviators with YOS 11-15 ranked it as the number forty-three reasons and aviators with YOS 16-20 ranked it as fifty-three. All of these disparities could be explained by the fact YOS 11-15 is the group becoming the “Navy Leadership” in question and that YOS 16-20 is the “Navy Leadership.”

The number-three reason for junior officer aviators to leave the Navy is “Red tape to do job.” This reason drops all the way to thirty-one for aviators YOS 11-15.

Lastly, a junior aviator’s spouse’s career appears to be a very important factor in the decision to stay or leave. In reasons to leave the service, junior officer aviators (YOS 6-10) ranked the effects of “PCS moves on spouse career” fourth and the negative “impact of location on spouse career” ninth. By comparison aviators with YOS 11-15 “PCS moves on spouse career” dropped to fourteenth. Similarly, “impact of location on spouse career” dropped to number forty-three for aviators YOS 11-15 and number fifty-three for aviators YOS 16-20. The reason for the drop in more senior aviators may be that as an aviator becomes more senior and achieves higher rank, the aviator makes correspondingly more pay and therefore the loss of a more lucrative spouse’s career becomes less important. This information correlates with Sullivan’s (1998) findings that aviators’ spouses are achieving higher levels of education and therefore are able to secure higher-paying careers if not for the fact that the Navy limits and changes their location.

Table 9 shows the comparison for reasons to stay in the Navy of the Argus database for aviators of different years of service.

**Table 9. Comparison of Argus Reasons to Stay in the Service Among Aviators (YOS 6-10) and All Aviators (YOS 10-20)**

<b>Aviators YOS (6-10)</b>	<b>Reason to Stay</b>	<b>YOS (11-15)</b>	<b>YOS (16-20)</b>
1	Camaraderie	2	7
2	Current job satisfaction	3	1
3	Job interest	4	4
4	Opportunity to work in primary rate/designator	19	3
5	Senior officer leadership quality	6	11
6	Level Responsibility	11	8
7	Level job challenge	12	25
8	Family support	1	5
9	Availability of detailer	16	.
10	PCS to jobs in good location	17	15

SOURCE: Argus Data, 16 December, 2002.

There are not as many noticeable differences between aviators of different years of service. Previously mentioned was “camaraderie” as a motivating factor to remain in the service. Junior officer aviators gave this their highest ranking for reasons to stay while it dropped to number two for aviators with YOS 11-15 and number seven for aviators with YOS 16-20. This could be explained in that as you become more senior, there are fewer and fewer officers of your rank within your unit to socialize with.

Again, job satisfaction issues are five of the top-ten reasons junior officer aviators gave for remaining in the Navy. The top reasons for staying in the Sullivan survey were “fulfillment/challenge” and “camaraderie/esprit de corps” (Sullivan, 1998). These correspond with “current job satisfaction,” “job interest,” “level responsibility,” “level job challenge,” and “camaraderie” in the Argus data.

Family support, while only number eight for junior officer aviators becomes the number one reason for aviators with YOS 11-16. This could be because once officers are YOS 11-16, they are more likely to have older children and family concerns that younger officers may not.

#### **D. SUMMARY**

Clearly, the Argus survey results show that as a group is broken down into smaller groups, the priority of reasons to remain in or leave the Navy can change by subgroup. Secondly, whether looking across the spectrum of junior officers, or of aviators of different years of service, there are differences in responses.

The largest difference can be seen between junior officer aviators YOS 6-10 and both groups of senior aviators, YOS 11-15 and YOS 16-20. This shows that within the aviation community, there is a large degree of different factors for retention among the senior aviators who can make policy changes and the junior aviators that have the lowest retention.

Except for aviators' "Repair parts needed" as a reason to leave, aviators were very similar to both URL officers and all officers. More differences were noted between junior officer aviators and other junior officers. A spouse's career appeared not to be as important to non-aviation officers as it was to aviation officers. While the reasons to leave the Navy "PCS moves effect on spouse career" and "Impact of location on spouse career" were both in the top-ten reasons for junior officer aviators, they were not nearly as high for junior officer non-aviators. Similarly, "Repair parts needed" did not make the top ten lists for either of the junior officer non-aviators groups.

## **IV. INTERVIEWS WITH NAVAL AVIATORS**

### **A. DATA COLLECTION**

The interviews were designed to give a cross sectional representation of the naval aviation community. Due to the lack of sponsored travel funds, only select Naval Air Stations were used for gathering data. To keep fleet coastal bias to a minimum, two bases in the Atlantic Fleet (N.A.S. Oceana and N.A.S. Norfolk) and one in the Pacific Fleet (N.A.S. Whidbey Island) were chosen. To narrow the scope in studying retention factors, fixed wing aircraft were chosen as they have the lowest retention rates. To have a good cross section of fixed wing aircraft and to remain within the three available Naval Air Stations, five fixed wing platforms were picked for interviews: F-14 Tomcat, F/A-18 Hornet, P-3C Orion, EA-6B Prowler, and E-2C Hawkeye.

A key criterion established for this research was that interviews would be conducted in at least two different squadrons from each community to help eliminate any bias from within a single squadron. This was necessary, because in the case of the P-3C community, three squadrons are assigned to a Naval Air Station, but one squadron is always deployed, leaving only two squadrons accessible for interviews without traveling to another base. Where possible, more than two squadrons per community were used for interviews. A second criterion was that the people interviewed would have at a minimum of more than two years of operational experience in their first fleet sea tour. This is important to insure that they have enough experience to assess reasons to stay in or get out of the Navy at the end of their MSR. Some aviators past their MSR (LCDR) were also interviewed to get a different perspective from individuals who had more experience in the Navy, and in their own aviation community. These Lieutenant Commanders were all on their second sea tour with YOS 10-13.

Due to time constraints on the part of the interviewer and operational commitments from the naval aviators interviewed, some groups were interviewed together as focus groups. Through 21 interviews sessions, 42 total pilots were interviewed. In 16 interviews or focus groups, 36 O-3 (Lieutenant) pilots were interviewed. The six O-4 (Lieutenant Commander) pilots were queried in five

interviews. The pilots interviewed were selected because they were available in their squadrons at the time of interviews. All pilots interviewed were male (unintentional). All of the pilots participated in either focus groups or interviews, and all interviews occurred in the first half of calendar year 2001. These interviews were conducted after assuring the aviators that what they said would be totally confidential.

The general format used for questions was:

1. What is the number-one reason to think about leaving the Navy?
2. What are other reasons to think about leaving?
3. What is the number-one reason to consider staying in the Navy?
4. What are other reasons to consider staying?
5. If the number-one reason you gave to leave were resolved, would you be enticed to stay? Why or why not?

Those individuals past their MSR were asked the same basic questions but were also asked about the situation when they were making a decision to stay in or get out at their MSR. Additionally, they were asked what they thought were the big issues facing the junior officers with whom they currently serve.

All interviews were recorded on audio cassettes. After completion of all the interviews, the audio cassettes were transcribed verbatim to facilitate further data analysis. The findings are presented below first as results common to all communities, then data specific to each community are discussed.

## **B. COMMON FINDINGS**

Fixed wing aviators for the five communities interviewed seem to have several retention factors that are common among them. Not surprisingly, it is almost always a combination of factors that tend to make junior officers think about leaving the service. While most pilots could name factors affecting them either way, it was a combination of both good and bad things that was being weighed.

The first and seemingly most predominant current factor for leaving the service seems to be the effect on the family. Traditionally, the effect on the family was primarily the absence of the parent from the family. Unlike 25 years ago, women today have many more opportunities open to them and many want a career outside the home. Family separation and PCS moves in today's Navy have a direct relationship to the spouse's career opportunities. It appears that more junior officers, who all have undergraduate education, are marrying women with higher levels of education also (Sullivan, 1998). Because of this education, a lot of these women want not just a job, but their own career. The old idea of being a "Navy Wife" just does not hold the appeal for today's spouses. In sixteen of the twenty-one interviews, including all six of the O-4 interviews, the importance of a spouse's career was addressed as a significant retention issue. It is a common motif that aviators make a deal with their spouses that states the spouse will support the aviator while he is in the service, but that as soon as the aviator's MSR is completed, the spouse wants the opportunity to have not just a job, but the chance to start a professional career. EA-6B Prowler pilot LT A of VAQ-A states "She has her own career and we have made a lot of sacrifices. She has made a lot of sacrifices for me to continue to do this, and I now I feel that it is time for me to sacrifice for her and go do something that includes her and gives her a chance for a career."

On the economic side, many aviators feel that in the long run, their family would be better off financially if both educated spouses had high paying careers, instead of the traditional male provider model. Aviators believe their spouses feel that they can not necessarily start a career due to frequent duty location changes and to the sometimes lack of available career opportunities on or near remote naval air stations. This information directly correlates with the information about spouse's careers in the Argus database. For junior officer aviators (YOS 6-10), the number-four reason to leave was the effect of PCS moves on the spouse's career and the number-nine reason to leave was the impact of location on the spouse's career. This appears to be a new trend. One of the EA-6B Prowler pilots, LT E attached to VAQ-C suggested that if the Navy does not want people to get out, "maybe they need to not let us get married."

The other way that family separation appears to be different now as compared to the past is that these women are likely to be in the work force, they are reduced to working, single-parent status. It is difficult to balance family and work with a spouse who is not available for childcare, transportation, etc. During eight of the 16 interviews with Lieutenants, married aviators without children said this was a major concern for them so that they could start having children. They want to be able to share the responsibility with their wives rather than leaving them as single, working parents.

The factor of family separation also affects the single aviators. Family separation to an unmarried aviator can mean time away from home, which translates to time away from the chance to start a relationship with the same type of educated and successful woman who is contributing to married aviators leaving the Navy. Another factor is that the same frequent duty location changes and remote Naval Air Stations that can hinder spouses from careers, make it more difficult for unmarried aviators to pursue such relationships. During six of the 16 O-3 interviews, single Lieutenants addressed this problem. One F/A-18 pilot, LT K of VFA-E, said “the thing being is that we do not want to move to some s\*\*\* hole.” LT H of VFA-D stated “the quality of life where the Navy chooses to place their operations at out of the way stations has a detrimental effect.” One Lieutenant, from the VP-H focus group, when asked what factors would make him consider leaving, said “I would say that areas that you can live in, like up here in XXXX for single guys, you can go out and have a good time only about two hours away. It is that far to meet the kind of women I want to start something real with, or even just have a good time.”

Another factor that is commonly discussed during interviews as a detractor for retention is the availability of parts and cannibalization. Cannibalization is the taking of a part from one plane to use on another instead of using a new part, and usually involves only a single flight of the newly repaired plane. The newly repaired plane then has the part again removed when it lands, and the part is placed back on the original plane. With the exception of the four interviews with pilots in the F/A-18 Hornet community, which is the only community of the five interviewed that is still in production, all interviews revealed that a lack of parts is not only affecting material readiness but now also

personnel readiness in terms of retention. LT N of VAW-I stated “you know parts will be an issue, parts always seem to be an issue. It is just that I’m tired of walking out to a plane and it doesn’t work. I’m tired of being in the situation where you’ve got three or four planes and only one plane works.” During 13 interviews, pilots stated that they felt a lack of parts adds to the workload of both themselves and the enlisted who work under them. This is called being asked to “do more with less” and is considered to be a “senior leadership problem” by many of the pilots and might explain the “trust in Navy leadership” and lack of “senior officer leadership” shown by the analysis of the Argus database in the top-ten reasons to leave the Navy for aviators (YOS 6-10).

Aviators feel that cannibalization leads to squadrons having “Hanger Queens,” or aircraft that sit in the hangers because they have a part broken and the remaining parts that are good are then used to keep the other planes operational. A pilot in the VP-G focus group stated:

You shouldn’t have to rob parts off of other planes. Now you’ve got two birds down to do one mission on one bird. You come back and take those parts off and put them back on the other bird. It just makes it a mask though. It just makes the numbers work out so that everyone in the higher up thinks that this squadron is getting it done. Meanwhile, we are flailing all over the place, swapping parts out here, swapping parts out there, you know?

This is a lot of work both for the maintenance crews to constantly change parts out, and for the maintenance administration departments to document all the part relocations. LT O of VF-L said:

You’ve got to take it off one jet and put it into another, and the need to take it back off the one jet and put it back into the other, the man hours, it’s frustrating. It’s like having only one battery for two different cars you own, switching the battery every time you want to drive it. You need to work twice as hard to keep your head above water.

Aviators feel that pre-flights can be forced to go a lot longer, causing mission-critical takeoff times to be missed. They also feel that the redundant and extra work by

their enlisted leads to retention and motivation problems among the troops. Analysis of the Argus database showed the availability of supplies as the number-one reason for junior officer aviators with YOS 6-10 to think of leaving the Navy. Need for repair parts was the number-five reason the leave the Navy.

With respect for the positive factors for retention, there seem to be some common reasons that make junior aviators consider staying in the Navy. The first of these is the obvious, the flying. In every interview through every community, the aviators stated that they liked what they did. The chance to fly military aircraft and use military hardware was cited as a prime motivator to join the Navy. They said that even when there were a lot of other collateral duties to perform, the flying is what keeps them motivated. In seven of the 21 interviews, pilots stated that even though they might have the opportunity to leave the Navy and fly for a civilian airline, the flying would not be the same. They felt that airline flying was a way to lessen the negative factors they found in the Navy, such as time away from home, little-to-no choice in locations to live, and family burden. The change in pay was only cited as a minor form of compensation.

These findings were consistent with the Argus data. Argus shows the amount of pay received was not in the top-thirty reasons to leave the service, but was actually the number-thirteen reason to stay in the Navy. These aviators even referred to being an airline pilot as being a “bus driver.” They felt that military flying, and the dynamics of the military flight environment, were much more interesting and fun, and thus increased their desire to remain in the service. These findings were consistent with the Argus data. Job satisfaction, job interest, the opportunity to work in their primary designator (1310), the level of job responsibility, and the level of challenge of their job, made up five of the top-ten reasons junior officer aviators gave Argus as reasons to remain in the Navy.

The second factor that positively, across the spectrum of communities, affects the junior aviator’s decisions about remaining in the Navy is the idea of having a great wardroom environment. The camaraderie of the wardroom was discussed in all 21 interviews. Most aviators interviewed felt that the people they dealt with on a day-to-day basis were of a better and more trustworthy caliber than people they could have the

opportunity to work with out of the Navy. F-14 pilot LT Q of VF-M said “You can’t find a higher class, quality group of people that have fun together and work together, and all that!” The close operations, where their lives depend on each other, are cited as the reasons for a close bonding within the wardroom environment. LT N of VAW-I said “the J.O.s [junior officers], we’ve got a really good camaraderie. So that is definitely one thing I like.” Although interviews showed that military flying was the most important factor for staying in the Navy, camaraderie is actually the number-one reason to remain in the Navy for junior officer aviators (YOS 6-10) in the Argus database.

One last important factor to discuss is the fact that anonymity was very important. Before the interviews commenced, the officers being interviewed were told that the data would be completely anonymous. A lot of them wanted to be completely sure that anything they said could not later be used against them or tied directly to them. When asked why, they said that they did not want it to be traced back to them for fear of repercussions such as lower fitness reports. Even in the case of those planning on leaving the Navy; they did not want their responses to affect their chances of getting into the reserves if they later decided to do so. When asked about surveys, they reported that, again, they were very skeptical of reporting things that they thought could be linked to them and later possibly used against them.

While the general analysis of reasons to leave and reasons to stay are similar to the Argus database results, there seemed to be a very dominant, specific reason to leave for each individual platform sub-community. These reasons would be impossible to retrieve from the Argus database due to the lack of discrimination among platforms as well as the small number of responses when looking at the junior officer aviators in the various platform sub-communities. These reasons do become apparent in interviews, however.

### **C. EA-6B PROWLER**

Six pilots from three different squadrons in the EA-6B community, stationed at Naval Air Station Whidbey Island, participated in five interviews. Four of the pilots were O-3s and two were O-4s. In the first EA-6B squadron (VAQ-A), LT A and LT B were

interviewed together while LCDR C was interviewed alone. In the second squadron (VAQ-B), LCDR D and LT E were both interviewed individually. In the third squadron (VAQ-C), four O-3s were interviewed as a focus group.

Throughout all five of the Prowler interviews, one factor became apparent as a major reason for an EA-6B Prowler pilot to leave the service: the large amount of time away from home. LT A of VAQ-A stated, “I mean we can be gone from home seven to ten months a year. I have been gone close to three-hundred days before... Not in a row, a Fallon det [detachment] here, an exercise there, workups, CQs [carrier landing qualifications], deployment, it all adds up to nights not spent at home in my own bed.” With the Air Force EF-111 being taken out of service, the Navy EA-6B squadrons have been forced not only to perform their Navy role but also to work with the Air Force. This has led to more Air Force exercises and therefore more time away from home. It was expressed in all five EA-6B Prowler interviews that even though deployment lengths are similar to other platforms in the Navy, the pilots felt that the time spent away from home while not on deployment was much greater than other aviation platforms. This means that they felt they had less time actually at home compared to other naval aviators. LCDR D of VAQ-B said “there is a very community-specific thing about always being gone.”

Time away from home is seen as detractor from marriage and parenting as well a chance for single pilots to start and sustain relationships. LT E of VAQ-B stated that on a tour of “three years I was gone for almost two years. I promised my wife I would never put her through that again.”

Another factor involved with time away from home is the lack of lead time for planning to be away from home. While deployments are fairly well planned out ahead of time, during the pre-deployment training time these other duties pop up and require pilots to be away from home on short notice. This makes it hard to plan for the absence. LCDR B of VAQ-A said the Navy should “try to put some stability in our warm-up cycle. Okay, you’re going to be gone X number of days this year, but I can tell you what those days are going to be.”

If extensive time away from home could be fixed, three of the four O-3 pilots and both of the O-4 pilots say it would be a lot easier to remain in the Navy. One of the four Lieutenants in VAQ-C said “I understand that much time [time that is required], you have to spend away [from home], when you are on workup cycles out there. If there were a way to reduce that though, whether it was reduced deployment time [or something else]... I think it would make things a lot easier.”

#### **D. F/A-18 HORNET**

Seven pilots from three different squadrons in the F/A-18 community, stationed at Naval Air Station Oceana, participated in four interviews. Five of the pilots were O-3s and two were O-4s. In the first F/A-18 squadron (VFA-D), LCDR F and LCDR G were interviewed together and LT H and LT I were interviewed together. In the second squadron (VFA-E), LT J and LT K were both interviewed together. In the third squadron (VFA-F), LT L was interviewed alone. Workload was a key theme that emerged from these interviews.

“The thing that frustrates me the most is how much we as a squadron as a whole, how much we are taxed with the amount of work they expect out of this squadron. It is unbelievable. It is unreal.” This was the sentiment of LT H of VFA-D. All of the squadrons interviewed as well as the majority of Navy F/A-18 Hornet squadrons are composed of single-seat fighter aircraft. This means that they have no NFOs and have less officer manning compared to other squadrons. In all four interviews, all seven F/A-18 pilots said that the biggest retention problem for F/A-18 pilots is the amount of time spent at work, especially compared to other platforms. For example, the F-14 squadrons have roughly twice the number of officers. LT L of VFA-F asked “When you look at our tomcat brothers, then you sort of get a feel that they get a lot more free time than we do, why is that? Is it because there’s twice as many of them to do a lot more of the same kind of job?” While other squadrons appear to have more officers to do the same number of tasks, the F/A-18 squadrons have to accomplish the same work with sometimes a quarter of the number of people in other squadrons. LCDR G of VFA-D stated:

While we still had the same number of programs, it was impossible for all the reports to be completed, so it took a JO [junior officer] in the squadron, he had his primary duties and probably three or four collateral duties. We didn't have any branch officers or anything like that so he was doing all those duties.

As a LT K of VFA-F put it, "The biggest detractor I would say is the amount of workload in this community."

In all four of the Hornet interviews the F/A-18 pilots brought up the problem of being overworked. LT I of VFA-D said:

I think that maybe we are over tasked sometimes. We're being spread too thin and that translates to even when you are at home and holding down a couple of other jobs (collateral duties). This is our slow time, technically. You can ask my wife, I leave every morning about 6:45 AM and I haven't been home yet until 6:00 or 6:30 PM and this is, you know, you're talking close to 12-hour days, and this is our slow time. It is disgusting the number of hours we put in.

LT H of VFA-D was extremely upset and stated "that's what I consider bull\*\*\*\* hours and makes me want to get out." LCDR F of VFA-D said:

You have two department heads in the squadron and guess what? Guaranteed you're probably going to have the same operational staff and doing the same stuff. You're just going to be working 18-hour days or probably doing 14-hour days. So guys look at that and go, what's the attraction in that?

Shore duty appears no longer to have the meaning of fewer working hours compared to sea tours, and pilots would like to see this change. LCDR F of VFA-D stated "What adds to that workload is the process we are seeing right now with shore duty continuing to get shorter and shorter for guys in our community and the rotation and opportunities we are being presented are being decreased based on manning." Junior officer pilots like LT L of VFA-F say things like "I want to enjoy my shore tour and not have to work the same kind of hours I worked [on sea duty]." Pilot LCDR G of VFA-D reported:

As an instructor, we worked six days a week, a full day or a half a day on Sunday, everyday, every week. There was never a day we could take off. There were many months that I never had a day off. There were 14 days that we were scheduled for three flights a day. I mean that is not shore duty in the sense that we knew or thought it was going to be.

Under manning of the squadrons appears to be a contributing factor to the intense workload felt by the pilots. LCDR F of VFA-D reported that after a deployment, when pilots started transferring out of the squadron, they weren't getting the new pilots in so that "we got all the way down for a couple of months, down to 12 pilots. All those administrative burdens are still there." Because of this lack of manpower, immediately after deployment instead of having a lot of down time, LT L of VFA-F reported "you go right back to work, where you are putting in 12 hours a day already. You say 'What the hell am I doing? We just got back!'" This manpower shortage then feeds attrition. The low manpower makes it more difficult to accomplish things like maintenance inspections. Pilot LCDR G of VFA-D said "It has taken us a month to a month to a month and a half to get ready for this thing, and it affects everyone because you've got the troops down there working, you know weekends, 14- to 16-hour days to get ready for this inspection."

LT I of VFA-D thinks "the entire workload is more. Yeah, absolutely, because we do a lot more missions and we have less guys with the changing times." As retention continues to remain low, the workload does not seem to get any better. LCDR F of VFA-D stated that "overall workload; that has a negative impact on family life and quality of life." When asked how to fix this problem LT K of VFA-F had a suggestion. "Okay, maybe it is time we need to start compressing squadrons and make, instead of two, 12-plane squadrons, have one, 8-plane squadron or something like that because that's about all we have the manning for." Most pilots said that they loved flying the F/A-18 and if there were a way to reduce the amount of work and time, that they would find it a lot easier to consider remaining in the Navy.

## **E. P-3C ORION**

Nine pilots from two different squadrons in the P-3C community, stationed at Naval Air Station Whidbey Island, participated in three interviews. In one squadron (VP-G), five of the pilots were a member of the first focus group, in the second squadron (VP-H), three O-3s were in the second P-3C focus group, and one O-4, LCDR M, was interviewed. In both the focus groups of O-3s and the interview with the O-4, it was stated that the P-3C Orion pilots' biggest concern is their career pipeline. One Lieutenant in the VP-G focus group said, "In our squadron this is probably the biggest issue. I don't want to go to the boat. I would like to be in command some day, if there is a reward, but not the boat." The normal career pipeline for a P-3 pilot is the first sea duty tour, shore duty, a disassociated sea tour (on an aircraft carrier not in a flying billet), and then back to a sea tour as a department head. The problem with the pipeline is associated with the most important reason people gave for remaining in the Navy, the flying.

The first effect that the pipeline has on the ability to fly is that the disassociated sea tour on an aircraft carrier is not a flying billet. This represents working away from the primary job of being a pilot and getting to fly. The Argus database showed that for junior officers, the majority of reasons to stay in the Navy focused around flying and their primary jobs as pilots. Most of these pilots feel they will be away from home for a long time without the compensation of flying. A Lieutenant in the VP-G focus group said "you don't want to go to the boat because you are gone ten months. You are told only one six-month deployment but the truth is that you are gone ten months out of the year." The pilots would like to be able to get other orders that involve flying. A Lieutenant in the VP-H focus group reported "that's not what I want to do. If I wanted to go on the boat, that's fine, but if I don't want to go there I shouldn't have to."

The other factor that discourages P-3 pilots is that if they accept orders to the aircraft carrier, they will lose their airplane pilot currency, which is needed for an airline job. Most pilots feel that they would then be trapped into going back for their department head sea tour in order to regain their currency and again become competitive for an airline job if they so desire. One pilot, a Lieutenant in VP-H, stated, "they've got you by the \*\*\*\* because you've lost your currency." For most pilots then, if they feel that they

want to leave the Navy, the time after their shore duty, which for the most part coincides with the end of the MSR, becomes the best time to leave for an airline job. Another Lieutenant in VP-G noted “that’s why we lose everybody at that point, they don’t want to go to the boat, I do not want to go to the boat.”

The last issue with “going to the boat” is that junior officer P-3 pilots do not see the reward after completing the carrier tour. A member of the VP-G focus group stated “there are issues like the kind of job we see the O-4s have.” If the motivation is being able to fly, the junior officer pilots feel that O-4s do not fly enough and do too much paperwork. One aviator in the VP-G group said “you are not coming back as a Junior Officer, you are not upgrading. You are going to be an O-4 pushing paperwork.” Another pilot in the VP-H group stated “all you are going to do is come back as an O-4... It is probably just more paperwork and no chance to fly. That’s the way I see it.” Because of this, a lot of the pilots feel that if you want get out, the best time to do it is upon the end of their MSR.

The best suggestion to improve retention was to develop an alternate career path that allows P-3 pilots to remain in the cockpit flying. The aviators said that if that was an option they would be much more likely to remain in the Navy. LCDR M of VP-H stated “you keep pilots in if they are flying.”

## **F. E-2C HAWKEYE**

Seven pilots from three different squadrons in the E-2C community, stationed at Naval Air Station Norfolk, participated in three interviews. In the first squadron (VAW-I) a single pilot, LT N, was interviewed. In the second squadron (VAW-J), three O-3 pilots were a member of the first E-2C focus group. In a third squadron (VAW-K), three O-3s were interviewed in a second E-2C focus group. A pilot, a Lieutenant in VAW-J, sums up the E-2 community retention problem. He says:

It is an off-tempo issue, especially in the E-2 community. We do work ups, we deploy, then when we come back, instead of getting time off we go do counter-narcotic operations. The only thing unique to the E-2 community is that you come home for a month off a cruise, now you’re

rolling for 59 [days], because 60 days was considered a deployment. So they take you for 59 days down to the Caribbean doing counter-narcotics operations. So you've said hi to your wife and kids and then for another month you say goodbye to them and when you get back you're right back into workup cycle again.

All seven of the E-2 pilots interviewed brought this up as a community problem. With the need for assets in the War-on-Drugs, E-2 pilots report coming home from a six-month deployment, having about a month of home time, and then packing their bags for a 59-day deployment, before returning home and having only a short time before beginning workups for the next deployment. Another Lieutenant in VAW-J stated "you've got three flights a day, but when are you going to get a day off in the 59 days? Not likely." What really seems to upset the pilots about this situation is that 59 days is one day short of qualifying for an official deployment. LT N of VAW-I noted:

The thing about the whole 59-day cycle is I remember having a broken airplane down there and nobody was concerned that you had been down there for 59 days, people were only concerned that you might not make it back before 60. People were interested because that would make their piece of paper now say 'he got deployed.' It's having to prevent that happening that is important. You can be there 59 days and nobody cares, but one more day, their world blows up and they care but before that they couldn't care less.

A pilot in the VAW-K focus group said "all I mean, it just is obvious to everybody else that they're playing the rule book so that we can just screw them to the maximum that the law will allow."

When asked if changing this would make a difference, the E-2 pilots interviewed said it would seem that they would have a more equitable arrangement making it easier to stay. They just want to have some more time at home. A pilot in the VAW-K focus group stated that not only did they have "a few periods of workups, a six-month cruise, get back from that, get a month off, and then we were off down to Puerto Rico for a month to eight weeks doing counter narcotics and it hardly seems like we caught our breath before starting it all again." The suggestion was to eliminate the extra anti-

narcotics detachments. It was suggested that this problem could be overcome by giving a squadron a deployment to Puerto Rico to fulfill the requirements instead of taking post-cruise squadrons.

## **G. F-14 TOMCAT**

Ten pilots from three different squadrons in the F-14 community, stationed at Naval Air Station Oceana, participated in six interviews. Nine of the pilots were O-3s and one was an O-4. In the first F-14 squadron (VF-L), a three O-3 focus group as well as an individual, LT O, were interviewed. In the second squadron (VF-M), LT P was interviewed individually while LT Q and LT R were both interviewed together. In the third squadron (VF-N), LT S and LT T were interviewed together while LCDR V was interviewed individually.

The F-14 Tomcat is unique among the other platforms in that the aircraft is scheduled to be phased out of operation over the next several years. Of the nine O-3 pilots, all shared a major concern about transitioning out of the F-14 and getting lost out of the community in the process. LT P of VF-M said:

They all know their platform is going away and now they are transitioning over so that kind of changes things. They know they are not coming back to the same community. If they come back, they might not have a job. They might get put somewhere else because they are not actually already trained for the new platform. So if they leave their squadron flying F-14s, go do some shore duty out of the platform, and then think they have a squadron to come back to, they might not necessarily get put into a new Hornet squadron, so then where are they? So that whole uncertainty for them is a big issue in the community.

Not knowing with certainty that they will wind up back in the cockpit of a tactical jet fighter makes a lot the Lieutenants apprehensive about remaining in the Navy. LT O of VF-L states:

Looking at our community, particularly the way we are headed right now, you know, starting to disestablish squadrons and transition to the Super-

Hornet, you know it kind of gives everyone an iffy sense of the future, especially for the pilot.

Another F-14 pilot, LT P of VF-M said:

The problem is that they (the Navy) go buy Super-Hornets, but there aren't enough of them yet. There will be a great deal of anticipation about filling orders because we know Tomcats are going away and it is going to be hard to come back.

LT T of VF-N said:

They are really worried because there are not going to be as many Hornets to come back to. So then there a lot of extra pilots and what to do with them? Where do they go? To ground jobs? That seems to be a concern for a lot of the guys.

To fix this problem, most of the pilots said that they wanted some kind of assurance as to where they would be going and what they would be flying if they remained in the Navy. They said that if they had a guarantee of remaining in the cockpit of a Super-Hornet, it would be a much easier decision to remain in the Navy.

## **H. SUMMARY**

In conclusion, the interviews found similar results as those found using Argus for the aviation community as a whole. However, within specific platforms, retention factors that are not identified by Argus became noticeable through interviews. Analysis of the Argus data showed flying and job satisfaction as well as camaraderie as being prime reasons to remain in the Navy for junior officer pilots. The interview information supports these data. Similarly, Argus showed that for a junior aviator, a spouse's career played an important role in the decision to leave the Navy and this factor was also confirmed by the interviews. Further, items such as parts and supply problems were brought up over and over again throughout the interviews just as Argus shows.

The problem with Argus is that a further breakdown of aviators into platform communities is not available. The interviews showed that while Argus is accurate for across-the-board reasons for aviators to leave, the biggest problems seem to be at the community level. The basic problems noted through the interviews are:

1. EA-6B Prowler: These aviators feel they are away from home for longer periods of time than pilots in other Navy squadrons.
2. F/A-18 Hornet: With fewer officers in F/A-18 squadrons than in other squadrons, the amount of non-flying work required by the pilots is perceived to be too time intensive.
3. P-3C Orion: The normal career paths of these pilots force them to take a disassociated non-flying tour, which takes them away from piloting, their primary reason to remain in the Navy.
4. E-2C Hawkeye: A 59-day, counter-drugs detachment, one day short of being counted as a deployment, is required of pilots after returning from deployments. As a result, the pilots have less time at home.
5. F-14 Tomcat: The community is being phased out of operation causing a lot of uncertainty regarding opportunities to fly tactical jets in the Navy.

These community problems cannot be seen in the Argus database because the database is not designed to examine separate aircraft communities.

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## **V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **A. SUMMARY**

This study will enhance the ability of the Navy to examine the problem of fixed wing aviator retention. First, historical retention information was examined. Second, the Argus Career Milestone Tracking system was explained and the Argus retention data collected were analyzed. Lastly, information from interviews with naval pilots was examined and compared with the information from Argus.

Historical retention information showed that junior aviator CCRs (Cumulative Continuation Rates) vary by platform, both historically and recently. Fixed wing aviators continue to have lower retention than rotary wing (helicopter) pilots and NFOs. This variation by platform has existed under both the previous selective bonus plan and under the current ACCP bonus plan open to all aviators.

To study the factors affecting retention, the Argus Career Milestone Tracking system was developed and has been online and operational since February 2001. Argus is a branching web-based survey designed to gather information on Navy personnel. This information is then used to propose program/policy changes. Argus generates two lists by frequency of responses to the web-based survey. The first list is the top 30 most important factors for the individuals in the queried group to consider staying in the Navy, the second list is the top 30 most important factors influencing their decisions to leave the Navy.

Argus shows that for all aviators as a group, flying and job satisfaction as well as the camaraderie of their wardrooms are the prime reasons for staying in the Navy. Factors such as a lack of supplies and parts are noted in the Argus data as major reasons to leave the Navy at the end of an aviator's initial commitment. Similarly, the Argus data show that a spouse's career plays an important part in the decision to leave the Navy for junior officer aviators.

Through 21 interviews sessions, 42 total pilots were interviewed. These pilots were from five fixed wing aircraft communities, two propeller (P-3C and E-2C) and three jet (F/A-18, F-14, and EA-6B). These squadrons were chosen from two bases in the

Atlantic Fleet (N.A.S. Oceana and N.A.S. Norfolk) and one in the Pacific Fleet (N.A.S. Whidbey Island), in order to minimize fleet coastal bias. In order to analyze the factors affecting junior officer aviators at the end of their initial commitment, the group of pilots consisted of 36 O-3 (Lieutenant) pilots that were all in their first sea tours with at least two years of fleet experience and six O-4 (Lieutenant Commander) pilots on their second sea tour.

The pilots were asked questions about their reasons for wanting to leave or stay in the Navy at the end of their initial commitments. The interviews confirmed the Argus analysis, that flying and job satisfaction issues, as well the camaraderie of the wardroom, are the primary reasons for junior officer aviators to remain in the Navy. Lack of parts and supplies leading to “cannibalization” were found through the interviews to be leading factors in an aviator’s decision to leave the Navy. The lack of parts and supplies were also found to be factors toward leaving the service in analysis of the Argus data. Further, the interviews showed that, similar to the Argus data, the career of an aviator’s spouse plays an important role in the decision to leave the Navy.

However, just as CCR rates show that as data get broken down into smaller sub-communities: propellers, jets, and helicopters, and then into specific platforms (F-14, F/A-18, P-3C, etc.), retention can differ, the interviews found the reasons to stay or leave the Navy can also differ. Through the interviews, important factors unique to each platform were found. These factors are major differences among the platforms that Argus is currently not able to show because it does not collect data by platform. The basic problems noted by each community through the interviews are:

1. EA-6B Prowler: These aviators feel they are away from home for longer periods of time than pilots in other Navy squadrons.
2. F/A-18 Hornet: With fewer officers in F/A-18 squadrons than in other squadrons, the amount of non-flying work required by the pilots is perceived to be too time intensive.
3. P-3C Orion: The normal career paths of these pilots force them to take a disassociated non-flying tour, which takes them away from piloting, their primary reason to remain in the Navy.

4. E-2C Hawkeye: A 59-day, counter-drugs detachment, one day short of being counted as a deployment, is required of pilots after returning from deployments. As a result, the pilots have less time at home.
5. F-14 Tomcat: The community is being phased out of operation causing a lot of uncertainty regarding opportunities to fly tactical jets in the Navy.

## **B. OBSERVATIONS ON THE ARGUS SYSTEM**

The Argus survey currently collects most of the data that are useful for analysis of aviator retention. However, one important item, specific platform, is missing. Retention rates by platform differ, and information broken down by platform would enable researchers to explore these differences. Policy changes undertaken to improve retention are most likely to be effective if they are platform specific.

Rather than collecting data on specific platforms, Argus asks respondents to classify themselves by aviation community as Fixed Wing Fighter, Fixed Wing Other, Rotary, or Other. As noted above, disaggregation by platform is preferable. However there is a further problem. A lack of definitions of these communities can mislead respondents to misclassify themselves. By one interpretation, only the F-14 and F/A-18 sub-communities fall under the Fixed Wing Fighter branch of Aviation, and all other fixed wing aviators would fall under Fixed Wing Other. This category would include both carrier based tactical jets (EA-6B, S-3), carrier based props (E-2C, C-2), land based jets (E-6A) and land based props (P-3C, and EP-3). But it is also possible that both S-3 and EA-6B pilots, who are tactical carrier jet aviators, could select Fixed Wing Fighter as their category. Further, the selection Other is not defined, but the first three choices, Fixed Wing Fighter, Fixed Wing Other, and Rotary should encompass all current Navy platforms, making the choice Other unnecessary.

Much of the data collected with the Argus questionnaire is not accessible. Particularly, researchers are limited to the ordinal rankings of responses by frequency without the actual frequencies of each response, limiting the number of interesting research questions that can be addressed. For example, we do not know whether one complaint is almost universally voiced compared with other reasons given for leaving the

Navy, or whether the top ten reasons are expressed with roughly equal frequency. The lack of such information leaves little basis for policy focus.

Argus has been online and operational since February 2001. OPNAV Instruction 1040.10 (May 2001) only makes the Argus survey optional. While there are well over 7,000 aviators currently in the Navy, from February 2001 to December 2002, only 490 aviators responded to the Argus survey.

There are two problems with this small number of responses. First, the sample group may be biased. Perhaps only disgruntled aviators voluntarily take the time to complete the Argus questionnaire. Only if a random sample were to complete the survey, instead of a self-selected voluntary sample, can the lack of bias be assured. The second problem is that with so few aviators in the database, smaller sub-communities with retention problems cannot be analyzed. By not having a larger population of Argus respondents, even if individual platform information were available, there are so few observations that the sample sizes for the smaller groups would be too small for such disaggregation to be meaningful.

## **C. CONCLUSIONS**

In general, the Argus Career Milestone Tracking System appears to be an accurate model for a large group, such as all aviators, or all junior officer aviators. The interviews corroborate Argus for aviators as a group.

Because Argus can not analyze pilots by platform, it is difficult to see if any common retention factors play a role at the platform level. The interview data showed that there are dramatic differences in retention factors among pilots of different platforms. These differences need to be addressed individually in order analyze how they affect junior officer naval aviator retention.

## **D. RECOMMENDATIONS**

This thesis makes these specific recommendations regarding the Argus Career Milestone Tracking System:

1. The Navy should change OPNAV Instruction 1040.10 (May 2001) to make mandatory the completion of the Argus questionnaire at all the career milestones listed in OPNAV Instruction 1040.10 paragraph 4, with the exception of involuntary separation from the naval service, which can continue to remain optional. Argus already prints a receipt of completion at the end of the survey. This should be used as a check off at the Personnel Support Division before transferring the paperwork needed for promotions, permanent changes of duty station, etc. This will increase the availability and usefulness of Argus data for analysis of personnel retention policies.
2. Because privacy of information is such a concern to people giving retention information, the Navy should create a very specific policy addressing security and privacy concerns. This new policy should be specifically stated at the beginning of the Argus survey. The Navy should establish and publicize repercussions for anyone divulging or using Argus retention information linked to individuals. If the data collected are to be useful, individual responses cannot ever be shared with the chain of command. These steps should help to keep individuals from only putting neutral answers to avoid possible career repercussions.
3. Argus should collect specific aviation platform information. This information would allow researchers to analyze the effect that factors affecting specific platform communities have on aviator retention.
4. The raw data from the Argus Career Milestone and Tracking System should be made available to outside sources for further research. First, by not allowing the raw data to be examined by outside sources, further analysis is limited, especially because the output is only the ordinal ranking of the frequency of the responses without the actual number of responses for each retention factor selected. Second, raw data would enable a researcher to partition the data as desired. For example, sub-communities

such as propeller, jet, and helicopter, as well as carrier aircraft and land based aircraft, could be defined by groups of platforms, the data partitioned by platform, and examined.

5. If the Navy chooses not to release raw Argus survey data to researchers and not to collect platform data, then at a minimum the Argus formatting for the branching under the Aviation community should be restructured in order to perform more detailed analysis of the data. There are two possible ways to perform this:
  - a. Under the Aviation community, there could be just three branches, Propeller, Jet, and Helicopter.
  - b. Under the Aviation community, there could be the four branches of Fixed Wing Carrier Based, Fixed Wing Land Based, Operational Helicopter, and Training Command. This would allow for carrier aviation to be examined separately.
6. If the Navy chooses not to release raw Argus Data and not to restructure the formatting under the Aviation branch, then the current platforms should be more precisely defined. The current choices of Fixed Wing Fighter, Fixed Wing Other, Rotary, and Other have no clear definitions. The lack of definitions can lead to respondents misclassifying themselves.
7. Future research should focus on the factors found to affect aviator retention. This research should examine possible solutions for the factors reported to have the largest negative impact on retention in each platform. These possible solutions will then need to be examined for both feasibility of implementation and financial cost, and then compared to the financial cost of proposed bonus programs.

For example, in the P-3C community, pilots are dissatisfied with their career path because it takes them out of the cockpit for a disassociated sea tour. Currently all P-3C pilots must complete a disassociated sea tour in order to screen for command. The current career path forces them to pursue command. One possible solution is to have an alternate career path that does not require pilots to have a disassociated sea tour. Pilots rejecting the disassociated sea tour could be told up front that they could not

get promoted past Lieutenant Commander, but that they could continue flying. While this would limit the number of people eligible for promotion and therefore command, it would allow for a larger number of department heads at the YOS 10-12 mark, where the retention gap is the largest. Were this policy considered, the cost of losing the manpower on the aircraft carriers (the disassociated sea tour) also would have to be examined. From which alternate sources could the missing manpower be extracted? How much financial cost would the Navy have to endure to replace the manpower? These and similar questions require improved data and further analysis.

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## **APPENDIX A. PILOT, NFO, AND PLATFORM AVIATION SUB-COMMUNITIES**

Cumulative Continuation Rates (CCRs) measure the propensity of an aviator in their seventh year of service to remain on active duty at the end of their twelfth year of service, which roughly corresponds to the end of their department head tour. Appendix A, Table A.1 shows the Cumulative Continuation Rates for all aviators from fiscal year 1985 through fiscal year 2000. These data are unpublished and were obtained from the Aviation Community Manager's Office. The data are in percentage form and therefore raw analysis of numbers for weighting purposes cannot be determined.

It is important to note that in 1989, changes to legislation resulted in an increase in the minimum obligated service, commitment incurred after completing aviation training and receiving wings, for aviators to increase to six years for NFOs, seven years for propeller and helicopter pilots, and eight years for jet pilots. Because of this, seven years later, in 1996, there appears to be an increase in the CCR. This increase is artificially driven by the increase in minimum obligated service (McKenzie, 1999).

**Table A.1. Aviation Cumulative Continuation Rates (CCR) for FY 1986-2000**

**part 1**

<b>FISCAL YEAR</b>	<b>85</b>	<b>86</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>90</b>	<b>91</b>	<b>92</b>	<b>93</b>
ALL AVIATORS	41%	40%	44%	43%	42%	44%	40%	37%	39%
ALL PILOTS	32%	32%	35%	34%	38%	41%	33%	33%	42%
JET PILOTS	29%	33%	36%	27%	35%	34%	36%	31%	52%
PROP PILOTS	22%	20%	19%	25%	26%	29%	23%	21%	29%
HELO PILOTS	60%	48%	55%	53%	52%	56%	51%	46%	44%
ALL NFOS	58%	57%	61%	60%	49%	49%	54%	45%	34%
JET NFOS	56%	57%	59%	61%	45%	47%	56%	47%	37%
PROP NFOS	61%	57%	62%	60%	50%	52%	48%	42%	30%
<b>PILOT</b>									
VFA (F/A-18)	33%	40%	42%	33%	30%	29%	42%	35%	49%
VF (F-14)	35%	31%	36%	25%	33%	30%	25%	22%	62%
VS (S-3)	20%	38%	31%	19%	25%	20%	15%	21%	22%
VAW (E-2C)	20%	21%	15%	19%	26%	14%	17%	43%	75%
VQ JET (ES-3)	21%	10%	33%	15%	100%	17%	50%	100%	100%
VAQ (EA-6B)	19%	22%	57%	19%	36%	12%	60%	45%	56%
VP (P-3)	22%	20%	18%	27%	28%	25%	28%	22%	24%
VQ PROP (EP-3)	33%	9%	11%	65%	52%	15%	18%	30%	56%
VQ TAC (E-6A)	37%	25%	14%	18%	14%	24%	5%	12%	10%
HS (H-3, H-60)	53%	58%	67%	49%	52%	61%	50%	49%	30%
HM (H-53)	82%	42%	41%	45%	62%	59%	36%	30%	59%
HSL (H-2, H-60)	56%	40%	45%	59%	54%	47%	59%	46%	51%
HC (H-46, H-3, H-53)	56%	40%	45%	53%	49%	49%	43%	49%	50%
<b>NFO</b>									
VF (F-14)	60%	57%	52%	50%	46%	42%	62%	51%	47%
VS (S-3)	58%	61%	47%	63%	40%	36%	52%	30%	29%
VP (P-3)	60%	52%	61%	61%	47%	53%	45%	44%	23%
VAQ (EA-6B)	53%	76%	61%	75%	52%	43%	58%	60%	29%
VAW (E-2C)	53%	76%	61%	60%	56%	41%	49%	41%	46%
VQ PROP (EP-3)	61%	73%	71%	47%	58%	46%	53%	47%	46%
VQ JET (ES-3)	86%	67%	67%	49%	41%	57%	41%	69%	40%
VQ TAC (E-6A)	63%	61%	74%	59%	63%	43%	42%	37%	29%

SOURCE: Office of Naval Aviation Community Manager

**Table A.1. Aviation Cumulative Continuation Rates (CCR) for FY 1986-2000**  
**part 2**

<b>FISCAL YEAR</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>2000</b>	<b>Historical Retention Average</b>
ALL AVIATORS	38%	34%	54%	40%	34%	31%	40.54%	39.97%
ALL PILOTS	40%	35%	52%	39%	32%	28%	39.33%	36.60%
JET PILOTS	42%	38%	41%	41%	38%	29%	43.34%	36.61%
PROP PILOTS	27%	22%	36%	23%	20%	18%	35.81%	24.72%
HELO PILOTS	48%	43%	55%	52%	37%	34%	38.51%	48.31%
ALL NFOS	33%	31%	59%	41%	38%	37%	43.06%	46.80%
JET NFOS	31%	27%	64%	38%	41%	39%	48.44%	47.10%
PROP NFOS	36%	32%	53%	44%	35%	33%	36.38%	45.74%
<b>PILOT</b>								
VFA (F/A-18)	50%	46%	52%	60%	40%	40%	37.35%	41.15%
VF (F-14)	54%	39%	32%	31%	45%	36%	58.02%	37.10%
VS (S-3)	39%	26%	42%	11%	35%	19%	34.26%	26.09%
VAW (E-2C)	40%	45%	48%	26%	20%	20%	42.81%	30.71%
VQ JET (ES-3)	100%	13%	100%	100%	13%	N/A	N/A	55.14%
VAQ (EA-6B)	46%	55%	38%	48%	60%	58%	62.73%	43.35%
VP (P-3)	25%	24%	35%	23%	19%	16%	32.53%	24.27%
VQ PROP (EP-3)	18%	55%	23%	48%	19%	27%	41.08%	32.53%
VQ TAC (E-6A)	22%	9%	50%	50%	21%	13%	40.53%	22.75%
HS (H-3, H-60)	59%	46%	55%	42%	52%	37%	47.81%	50.51%
HM (H-53)	28%	25%	91%	49%	20%	31%	23.83%	45.22%
HSL (H-2, H-60)	48%	45%	50%	52%	40%	34%	34.85%	47.58%
HC (H-46, H-3, H-53)	43%	40%	58%	54%	29%	29%	41.95%	45.58%
<b>NFO</b>								
VF (F-14)	45%	30%	67%	34%	39%	33%	54.63%	48.10%
VS (S-3)	26%	27%	74%	37%	46%	36%	46.90%	44.30%
VP (P-3)	28%	27%	58%	45%	26%	27%	37.15%	43.37%
VAQ (EA-6B)	25%	32%	65%	41%	48%	51%	47.71%	51.05%
VAW (E-2C)	52%	40%	46%	48%	44%	41%	35.84%	49.37%
VQ PROP (EP-3)	59%	35%	46%	32%	83%	46%	33.32%	52.27%
VQ JET (ES-3)	12%	69%	53%	100%	38%	N/A	N/A	56.36%
VQ TAC (E-6A)	44%	13%	70%	57%	50%	49%	49.51%	50.23%

SOURCE: Office of Naval Aviation Community Manager

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## **APPENDIX B. ARGUS DATA**

When queried for certain demographic groups, ARGUS will generate 2 lists by frequency of response. One list is of the top 30 most important factors for the individual in the queried group to consider staying in the Navy, the other list is the top 30 most important factors influencing their decision to leave the Navy. The Argus Data used in this study was obtained from the database on 16 December, 2002. These full lists can be found in Appendix C. The first column labeled “all” shows, in the order of frequency, the top thirty most important influences to stay in or leave the Navy. The following five columns are labeled zones A, B, C, D, and E. These zones represent the responses of the desired demographics with different Years of Service (YOS).

- Zone A: 0-5 YOS
- Zone B: 6-10 YOS
- Zone C: 11-15 YOS
- Zone D: 16-20 YOS
- Zone E: 21+ YOS

**Table B.1. Argus Top 30 Reasons to Leave the Navy: All Officers**

	Reason to Leave	All	Zone A	Zone B	Zone C	Zone D	Zone E
1	Advancement/Promotion Opportunities	1	18	10	1	1	1
2	Availability of supplies	2	3	1	3	2	11
3	Trust Navy leadership	3	7	2	2	4	2
4	Red tape to do job	4	1	4	6	6	6
5	Current job satisfaction	5	5	8	13	7	5
6	Impact of Navy on family	6	2	3	11	11	20
7	Control over PCS assignments	7	9	6	7	13	3
8	Senior officer leadership quality	8	10	5	8	12	12
9	Recognition job accomplishments	9	16	11	5	14	4
10	Amount of pay received	10	6	7	10	18	21
11	Impact PCS moves on spouse career	11	23	9	12	8	8
12	Separation from family/friends	12	27	12	14	3	9
13	Unit morale	13	4	26	9	19	24
14	Zero defects mentality	14	21	16	4	15	19
15	Hours at sea to get job done	15	12	13	19	10	27
16	Impact of PCS moves on children	16	40	32	42	5	7
17	Balance work/personal time	17	17	15	16	9	28
18	Immediate supervisor leadership quality	18	11	25	23	35	14
19	Number personnel	19	13	18	21	33	18
20	Medical Care for family	20	26	22	17	17	15
21	Childrens education	21	89	33	15	21	10
22	Respect Navy leadership	22	30	17	25	30	23
23	Department head leadership quality	23	8	30	18	82	61
24	Time training	24	15	14		25	49
25	Number quick response tasks	25	43	56	24	29	13
26	Changes to retiree benefits	26	54	34	37	16	22
27	Physical Fitness Standards	27	35	36	51	27	16
28	Impact of location on spouse career	28	33	23	34	20	31
29	Amount base pay	29	28	28	27	22	37
30	Recognition of job performance	30	70	40	32	26	17

**Data current as of December 16, 2002: Number of Officers = 3131**

Source: Institute for Selection and Classification

**Table B.2. Argus Top 30 Reasons to Stay in the Navy: All Officers**

	<b>Reasons to Stay</b>	<b>All</b>	<b>Zone A</b>	<b>Zone B</b>	<b>Zone C</b>	<b>Zone D</b>	<b>Zone E</b>
1	Family support	1	13	6	1	1	3
2	Current job satisfaction	2	5	1	2	3	2
3	Advancement/Promotion Opportunities	3	7	11	3	2	1
4	Job interest	4	6	5	5	4	6
5	Senior officer leadership quality	5	2	9	4	7	8
6	Immediate supervisor leadership quality	6	9	2	6	6	7
7	Level Responsibility	7	20	7	9	5	4
8	Your medical benefits	8	1	19	8	12	12
9	Amount of leave you receive	9	3	8	10	15	14
10	Level job challenge	10	15	13	7	11	9
11	Camaraderie	11	8	4	12	10	13
12	Opp to work in primary rate/designator	12	14	3	19	8	10
13	Amount of pay received	13	22	15	16	14	5
14	Educational benefits	14	11	10	14	18	17
15	Working relations in Navy	15	27	16	13	19	11
16	Control over PCS assignments	16	24	12	17	13	15
17	Unit morale	17	17	26	21	9	16
18	Medical Care for family	18	21	14	22	17	21
19	Opp to travel	19	12	18	29	16	26
20	Value of your benefits	20	16	21	28	22	19
21	PCS to jobs in good location	21	19	22	11	23	24
22	Professional Development Opportunities	22	28	31	15	27	18
23	Your dental benefits	23	4	67	23	38	51
24	Respect Navy leadership	24	18	.	41	20	20
25	Department head leadership quality	25	10	17	33	33	45
26	Availability commissary	26	25	50	27	21	23
27	Availability of detailer	27	34	25	24	25	22
28	Job complexity	28	44	29	20	31	34
29	Career Enhancing Opportunities	29	33	53	18	34	28
30	Cost family medical care	30	30	23	26	32	50

**Data current as of December 16, 2002: Number of Officers = 3131**

Source: Institute for Selection and Classification

**Table B.3. Argus Top 30 Reasons to Leave the Navy: Unrestricted Line Officers**

	Reason to Leave	All	Zone A	Zone B	Zone C	Zone D	Zone E
1	Availability of supplies	1	1	1	2	2	19
2	Advancement/Promotion Opportunities	2	26	20	1	1	1
3	Trust Navy leadership	3	16	2	3	6	6
4	Impact of Navy on family	4	2	3	6	4	14
5	Red tape to do job	5	3	5	15	7	2
6	Control over PCS assignments	6	6	4	4	15	4
7	Current job satisfaction	7	11	6	14	11	8
8	Senior officer leadership quality	8	5	7	11	12	21
9	Separation from family/friends	9	42	11	10	5	3
10	Hours at sea to get job done	10	8	9	8	3	25
11	Impact PCS moves on spouse career	11	22	10	7	8	13
12	Balance work/personal time	12	10	14	12	10	18
13	Recognition job accomplishments	13	14	15	13	19	7
14	Zero defects mentality	14	17	17	5	22	26
15	Medical Care for family	15	21	18	25	17	12
16	Time training	16	9	8	.	16	39
17	Impact of PCS moves on children	17	75	43	.	9	5
18	Number personnel	18	19	22	24	33	22
19	Amount of pay received	19	30	23	21	36	15
20	Respect Navy leadership	20	33	13	34	27	20
21	Number quick response tasks	21	35	38	16	30	10
22	Childrens education	22	.	31	18	24	9
23	Immediate supervisor leadership quality	23	12	75	35	62	16
24	Unit morale	24	4	37	20	67	51
25	Recognition of job performance	25	47	39	23	21	11
26	Repair parts needed	26	39	16	9	41	55
27	Department head leadership quality	27	7	27	54	63	87
28	Job interest	28	18	29	41	32	33
29	Hours in port to get job done	29	13	28	22	38	68
30	Impact of location on spouse career	30	41	26	30	23	27

**Data current as of December 16, 2002: Number of URL Officers = 1613**

Source: Institute for Selection and Classification

**Table B.4. Argus Top 30 Reasons to Stay in the Navy: Unrestricted Line Officers**

	<b>Reason to Stay</b>	<b>All</b>	<b>Zone A</b>	<b>Zone B</b>	<b>Zone C</b>	<b>Zone D</b>	<b>Zone E</b>
1	Current job satisfaction	1	6	1	2	2	1
2	Family support	2	17	5	1	1	3
3	Advancement/Promotion Opportunities	3	10	11	6	4	2
4	Job interest	4	3	6	4	7	5
5	Senior officer leadership quality	5	1	2	3	13	10
6	Level Responsibility	6	35	8	11	3	4
7	Immediate supervisor leadership quality	7	12	7	5	5	9
8	Camaraderie	8	5	4	13	10	6
9	Level job challenge	9	13	12	7	8	7
10	Opp to work in primary rate/designator	10	8	3	19	9	15
11	Amount of leave you receive	11	7	10	9	11	19
12	Your medical benefits	12	2	19	8	18	18
13	Amount of pay received	13	18	9	12	16	8
14	Unit morale	14	16	33	15	6	13
15	Working relations in Navy	15	44	29	17	17	11
16	Control over PCS assignments	16	20	17	14	14	14
17	Educational benefits	17	11	15	24	19	20
18	Opp to travel	18	9	22	29	12	30
19	PCS to jobs in good location	19	22	18	10	24	28
20	Medical Care for family	20	23	14	32	15	25
21	Availability of detailer	21	29	16	26	31	12
22	Your dental benefits	22	4	62	34	37	.
23	Availability commissary	23	41	43	21	20	22
24	Respect Navy leadership	24	14	.	38	28	21
25	Department head leadership quality	25	15	13	22	75	.
26	Professional Development Opportunities	26	.	.	23	21	16
27	Co-worker competence	27	32	21	28	33	24
28	Job complexity	28	36	23	16	60	31
29	Cost family medical care	29	24	25	20	27	.
30	PCS to leadership jobs	30	31	.	18	25	29

**Data current as of December 16, 2002: Number of URL Officers = 1613**

Source: Institute for Selection and Classification

**Table B.5. Argus Top 30 Reasons to Leave the Navy: Aviators**

	Reason to Leave	All	Zone A	Zone B	Zone C	Zone D	Zone E
1	Availability of supplies	1	1	1	1	1	9
2	Trust Navy leadership	2	14	2	9	10	7
3	Advancement/Promotion Opportunities	3	.	16	2	2	1
4	Control over PCS assignments	4	2	8	3	15	2
5	PCS moves on spouse career	5	10	4	14	3	11
6	Red tape to do job	6	.	3	31	4	3
7	Medical Care for family	7	4	42	13	5	4
8	Impact of Navy on family	8	5	22	7	6	44
9	Repair parts needed	9	.	5	4	12	33
10	Separation from family/friends	10	31	45	8	7	12
11	Senior officer leadership quality	11	37	7	10	29	50
12	Opp to work in primary rate/designator	12	7	26	6	11	8
13	Impact of location on spouse career	13	11	9	15	46	20
14	Hours at sea to get job done	14	22	19	11	18	15
15	Current job satisfaction	15	.	13	.	13	10
16	Number personnel	16	27	6	.	42	19
17	Cost of housing	17	.	14	32	8	39
18	Impact of PCS moves on children	18	.	.	.	14	5
19	Childrens education	19	.	.	36	24	6
20	Amount BAH	20	.	48	17	9	45
21	Respect Navy leadership	21	.	10	43	53	23
22	Balance work/personal time	22	8	29	.	19	16
23	Ability to get medical appointments	23	.	43	5	23	.
24	Unit morale	24	3	27	21	.	.
25	Number quick response tasks	25	.	18	23	17	29
26	Recognition job accomplishments	26	25	20	25	37	31
27	Time training	27	23	12	.	36	.
28	Recognition of job performance	28	.	33	.	20	17
29	Zero defects mentality	29	26	36	12	.	35
30	Ability to take leave	30	6	49	.	.	48

**Data current as of December 16, 2002: Number of Aviators = 490**

Source: Institute for Selection and Classification

**Table B.6. Argus Top 30 Reasons to Stay in the Navy: Aviators**

	<b>Reason to Stay</b>	<b>All</b>	<b>Zone A</b>	<b>Zone B</b>	<b>Zone C</b>	<b>Zone D</b>	<b>Zone E</b>
1	Current job satisfaction	1	15	2	3	1	1
2	Job interest	2	1	3	4	4	2
3	Family support	3	19	8	1	5	3
4	Opp to work in primary rate/designator	4	2	4	19	3	5
5	Camaraderie	5	12	1	2	7	10
6	Senior officer leadership quality	6	6	5	6	11	12
7	Advancement/Promotion Opportunities	7	11	21	7	2	4
8	Level Responsibility	8	.	6	11	8	7
9	Immediate supervisor leadership quality	9	31	45	5	9	9
10	Unit morale	10	.	30	8	6	6
11	Level job challenge	11	16	7	12	25	15
12	Your medical benefits	12	3	.	31	17	16
13	Amount of pay received	13	.	16	29	.	11
14	Working relations in Navy	14	29	19	.	.	8
15	PCS to jobs in good location	15	.	10	17	15	.
16	Co-worker competence	16	13	31	21	23	14
17	Amount of leave you receive	17	24	.	33	10	26
18	Respect Navy leadership	18	5	.	.	37	17
19	Control over PCS assignments	19	.	26	.	14	13
20	Opp to travel	20	.	12	9	24	.
21	Educational benefits	21	27	17	.	32	.
22	Professional Development Opportunities	22	.	.	14	13	18
23	Quality of training	23	.	23	15	19	19
24	Availability of detailer	24	.	9	16	.	.
25	Job difficulty	25	.	11	27	.	.
26	Coworker competence	26	.	35	.	16	24
27	Cost family medical care	27	20	38	28	28	.
28	Your dental benefits	28	4	.	.	.	.
29	Availability commissary	29	28	.	35	33	28
30	Department head leadership quality	30	9	20	.	.	.

**Data current as of December 16, 2002: Number of Aviators = 490**

Source: Institute for Selection and Classification

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